



amateur radio

Vol. 36, No. 6
JUNE
1968

30c

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Hook-up Wire, black, yellow, green, red, white, blue, grey, 4 per yard, or \$3.100 yd. reel.

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6A18	—	\$1.69		6C21	—	\$1.31	
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"AMATEUR RADIO"

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Editor:

K. E. PINCOTT VK3AFU

Assistant Editor:

E. C. Manifold VK3EM

Publications Committee:

G. W. Baly (Secretary) VK3AOM

A. W. Chandler (Circulation) VK3OLG

Ken Gillespie VK3OK

W. E. J. Roper VK3ARZ

Draughtsmen:

Clem Allan VK3ZIV

Ian Smith 36 Green St., Noble Park

Advertising Enquiries:

C/o, P.O. Box 30, East Melbourne, Vic., 3002.

Mrs. BELLAIRS, Phone 41-3535, 478 Victoria

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W.I.A. OFFICIAL BROADCASTS

NEW SOUTH WALES

VK2W1, Sundays, at 1100 hrs. E.A.S.T.	
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7146 Kc. a.m.	146.000 Mc. f.m.
53.086 Mc. a.m.	(53.950 Mc. f.m. proposed shortly)

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1825 Kc. a.m.	144.500 Mc. a.m.
3000 Kc. a.s.b.	145.954 Mc. f.m.
7146 Kc. a.m.	432.500 Mc. a.m.
53.032 Mc. a.m.	

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VK4W1, Sundays, at 0900 hrs. E.A.S.T.	
2380 Kc.	53.995 Mc.
7146 Kc.	144.36 Mc.
14.342 Mc.	

SOUTH AUSTRALIA

VK3W1, Sundays, at 0900 hrs. C.A.S.T.	
3.5, 14, 32 and 144 Mc. bands.	

WESTERN AUSTRALIA

VK6W1, Sundays,	
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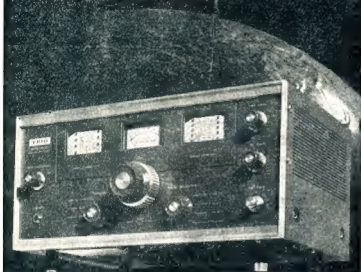
TASMANIA

VK7W1, Sundays, at 1000 hrs. E.A.S.T.	
3072 Kc., and re-transmitted by representative stations at—	
7146 Kc.	144.1 Mc.
53.032 Mc.	432.6 Mc.

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20 and 15 metres—20 Kcs. per division.
10 metres—50 Kcs. per division.

Antenna Input: 50-400 ohms impedance.

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Sensitivity: 2 μ V for 10 dB S/N Ratio (at 10 Mcs.).

Selectivity: ± 5 Kcs. at —60 dB (± 1.3 Kcs. at —6 dB).

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V3—6AQ5 HF Oscillator.

V4—6BA6 1st IF Amplifier.

V5—6BA6 2nd IF Amplifier.

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V7a—6AQ5 Beat Frequency Oscillator.

V7b—6AQ5 1st AF Amplifier.

V8—6AQ5 Audio Output.

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SW-055—ANL.

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Frequency response	50 to 15,000 c.p.s.

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Size: 4½" long, 1¼" diameter.	Colour: TWO-TONE GREY.
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DF-3

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Properly used, part of the driver energy is fed through into the output circuit. Also there is negative feedback automatically applied, reducing distortion. That action is similar to the effect of an un-bypassed cathode resistor in an audio amplifier.

However, all is not rosy in the garden of grounded grid amplifiers! There is more to it as has been pointed out by Elmac. As tube manufacturers, they are only interested in the proper use and application of their products.

Nobody less than their research engineer, Bill Orr, of Quad antenna fame, etc., has published their findings in "QST" in 1960, 1962 and 1964. He has clearly pointed out that:—

1. Screen grid tubes, with their grids all tied to ground, should not be used. Normal control grid bias and second grid positive voltages should be applied. In particular, modern high-amplification factor tubes can easily be overdriven and damaged.
2. A tuned cathode circuit is essential to maintain proper wave form and low distortion. It acts as a fly-wheel as required in a class C plate modulated output circuit.

Therefore only TRIODES are recommended in grounded grid amplifiers, used in circuits with tuned input provisions.

Naturally these amplifiers are more complicated and can cost more than simpler set-ups with cheaper tubes, except for one type.

The **HEATH HA-14 Amplifier Kits** have all that is needed—two husky triodes, and will provide full legal power with less than 50 watts driving power and 1800 volts of H.T.

These kits are available for only \$150, the cheapest linear solution, with tuned circuitry and even A.L.C. voltage generation.

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THE FEDERAL CONVENTION

The Federal Convention held in Sydney over Easter was held in conjunction with an inaugural Congress of Region III Societies. A statement from this Congress appeared on page 13 of last month's issue of "A.R."

One very significant point about the 1968 Convention and Congress was that the Australian Post Office was represented by the Controller Radio Branch, P.M.G., Mr. C. Carroll, who participated in the opening session of the I.A.R.U. Region III Congress, sat in on some of the working discussions, and attended the Convention Dinner. To the best of my knowledge, it is the first time that the Postmaster-General has been officially represented at a W.I.A. Convention by a senior official from Central Office. We wish to thank the Postmaster-General for this gesture, which was viewed both by W.I.A. members and overseas delegates as an indication of the standing of the Amateur Service in the eyes of our Administration.

As is usual, many motions were discussed at length, briefly these fall into seven categories:—

Constitution Items

No formal motion was presented, but a letter from the solicitors handling these matters was read. This referred to some minor problems which have arisen with the presentation of our documents to the Attorney-General. However, it was pointed out that it is expected these problems will be overcome soon, and incorporation of the Federal Company will eventuate before the end of this year.

Policy Items

Among this group was the motion regarding an increase in the price of "A.R." This was referred to by the Editor on page 22 of last month's issue. Federal Executive has appointed a sub-committee to examine the matter as requested by Federal Council. Y.R.S. matters occupied some time—discussion revolved around the title of the scheme, and the status of Y.R.C.S. vis-a-vis W.I.A. A Federal Y.R.S. co-ordinator has been appointed by F.E. Federal policy on novice licensing was discussed, a motion that the Institute no longer advocate the issue of novice licences by the Australian Administration was narrowly carried. Several motions regarding W.I.A.'s issuance of high-speed Morse proficiency awards were carried, and F.E. has requested Federal Activities Officer to investigate the matter and report.

Administration and Finance

The major series of motions in this section dealt with the administration of the I.T.U. Fund. A motion to invest the fund in government bonds was

defeated, as was a motion to constitute the I.T.U. Fund as a formal Trust Fund. However, it was resolved that I.T.U. monies, together with \$300 representing past interest, be transferred to a separate bank account. This will allow interest to accrue and compound separately from general F.E. monies. Executive has taken the necessary steps to preserve the I.T.U. Fund in line with W.I.A. policy.

The Treasurer's report, presented in Sydney, indicated that VK3, 4, 5, 6 and 7 have reached their I.T.U. Fund targets, and the Fund this month should stand at approximately \$8,000, being both donations and interest accrued.

L.A.R.U. Matters

Federal Council approved the actions of Executive in convening an Inaugural Region III Congress, and agreed to provide a Secretariat, and an annual sum of \$600 to the I.A.R.U. Region III Division. This sum will be recovered from VK Divisions at a rate of 20 cents per member per annum. J.A.R.L., N.Z.A.R.T. and P.A.R.A. will also contribute annual sums to I.A.R.U. Region III Division and inclusive of W.I.A.'s contribution, the annual income of the regional organisation should approach \$2,200. It may be pointed out that the image of W.I.A. has risen considerably in the eyes of our own government and

FEDERAL COMMENT

of other Amateur Societies throughout the world, due to its initiative in convening the inaugural Congress, and its assistance in the outcome which should advance Amateur Radio in this Region of Asia and Oceania. Federal Executive will assume the role of "Region III Secretariat" and undertake the administration of the regional organisation under the control of the Directorate.

P.M.G. Representation

Very few matters arose in this section, however Federal Secretary was given some information about matters affecting certain Divisions which F.E. is to take up with the Department.

Contents

There were three different motions and suggested changes to the R.D. Contest scoring methods. A long debate resulted in a realisation that any scoring formula would introduce anomalies. It was decided to revert to the 1965 rules for this year's R.D. Contest with the 1967 rules for v.h.f. participation.

An amendment of rules of the John Moyle Memorial Field Day Contest was agreed to, this will allow a period of 26 hours from 0600 GMT with stations competing to operate for any 24-hour period within that 26 hours.

General Business

Several items arose as general business. These require ratification before action because they had not been circulated prior to the Convention.

Appointments

Federal Executive at its first meeting for 1968-69, in May, made the following appointments:—

Federal President W.I.A. and Director I.A.R.U. Region III Division: J. Battrick, VK3OR.

Federal Vice-President and member I.A.R.U. Region III Secretariat: M. Owen, VK3KI.

Federal Secretary and Secretary-General I.A.R.U. Region III Division: P. Williams, VK3IZ.

Federal Activities Officer and member I.A.R.U. Region III Secretariat: D. Rankin, VK3QV.

Federal I.T.U. Liaison Officer: G. Pither, VK3VX.

Federal Treasurer: K. Connelly, VK3ARD.

Federal Business Manager: A. Seedsman, VK3IE.

Federal Intruder Watch Officer and member I.A.R.U. Region III Secretariat: D. Wardlaw, VK3ADW.

Federal Y.R.S. Co-ordinator: J. Webster, VK2ZPW.

Federal Historian and Policy Officer: G. Glover, VK3AG.

Federal QSL Manager: R. Jones, VK3RJ.

Federal Awards Manager: G. Wilson, VK3AMK.

Federal Contest Manager: N. Penfold, VK6ZDK.

Federal S.W.I. Awards Manager: Eric Trebilcock, BERS195.

From a perusal of this list, it is apparent that some F.E. members now wear "two hats". The desire for W.I.A. to administer the I.A.R.U. Region III Division came from other countries and this was accepted by W.I.A. at Sydney. The same people administer the two organisations that is sure, but they are nevertheless two separate organisations with distinct status and finance.

Independent, separate and distinct from the I.A.R.U. Region III Division, W.I.A. has its own funds, and the I.T.U. Fund, and its I.T.U. Liaison Officer, as before. However, W.I.A. is now a member of a new regional "club" designed to advance Amateur Radio in Asia and Oceania and work for regional solidarity should any further attack on our frequencies occur.

A CRYSTAL LOCKED AM-CW TRANSMITTER FOR 6 METRES

RODNEY CHAMPNESS, VK3UG/VK0CR

THIS particular transmitter I built whilst down on Macquarie Island.

I did think at one stage of building an s.s.b. transceiver but not having quite enough of the necessary parts, we settled for an a.m./c.w. transmitter. In this particular circuitry form it works quite well. The audio is very conventional, a few compromises were however necessary as I didn't have all the right value components available.

My first couple of attempts at the r.f. side of the works did not pan out as anticipated. The first attempts were using various triode-pentode valves, the triode as an overtone oscillator and the pentode as a doubler-driver. I was not able to get quite as much drive as I would have liked to the final. I ended up, as is evident in the diagram, with a triode overtone oscillator followed by a triode doubler into a pentode straight through driver to the tetrode p.a. valve.

The transmitter was built on a 7" x 11" chassis; it could be smaller as there is a fair bit of spare space. Commencing with the modulator, it can be seen that the first two stages follow normal microphone amplifier circuitry. The second half of the 12AX7 feeds an ex-522 driver transformer to give push-pull audio to the grids of the 6BQ5 modulators. The 522 transformer is not designed to handle d.c. current in its primary, hence the blocking capacitor feed system.

The 6BQ5s are run with fixed bias in the neighbourhood of -12 volts on transmit and -20 when not transmitting. The 6BQ5s are running somewhere between class AB1 and B1. The 32 uF capacitor fitted from the 6BQ5 screens to earth is to keep the screens at a reasonably constant voltage whilst modulating. This capacitor could be increased to 50 uF, if desired.

The audio response of the modulator is shaped to cut the highs and the lows of the speech spectrum. The 100 pF capacitor to earth restricts highs and acts as an r.f. bypass and the 470 pF coupler restricts lows and reduces any residual hum. To prevent acoustic feedback the h.t. line to the modulator and all bar the oscillator of the r.f. section is grounded immediately on going to receive. The audio quality on listening tests is quite good.

The modulation transformer is not of the correct impedance ratio unfortunately, it was the only one that I had available. Its impedance values were primary 8,000 ohms plate to plate and secondary 4,200 ohms. A more suitable ratio would be 8,000 ohms plate to plate with a secondary impedance of about 2,800 ohms. The sensitivity of the modulator is quite sufficient for average crystal type microphones.

The r.f. side of the transmitter follows fairly standard lines. The crystal overtone oscillator uses the Squier type oscillator which does not seem as popu-

lar as the Robert Dollar, but which I have found extremely reliable, easy to get going with quite high output. The crystal is in the 8 meg. range and its frequency is tripled and then applied to the doubler stage. The doubler is a standard type of circuit which feeds into the 6AM5 driver. The drive to the 6AM5 is about a third of a millamp.

This stage is treated a little more cautiously as it would be extremely easy to get feedback as input and output are on the same frequency. First precaution is to place a tin plate shield across the valve, so isolating input and output including the associated tuning coils. The plate and grid coils are also placed at right angles to one another.

All the 53 meg. coils are air wound with 18 gauge tinned copper wire with the exception of the p.a. coil which is wound with 18 gauge wire. All coils are below chassis level with the exception of the p.a. coil and coupling link, so meaning that the low level 53 meg. coils are partially shielded from the output coil.

The p.a. stage is the normal type, no necessity for neutralisation was found necessary, but it could be quite easily added if thought desirable. The p.a. is quite stable. All by-passes should have short leads to minimise inductance in the leads. There is no sign of regeneration in this transmitter as removing the crystal kills all output.

The transmitter as stated is stable, being crystal controlled at all times with a proviso however. Care is needed in tuning the doubler plate coil as the final will feed back some energy to the driver grid, causing self oscillation. To eliminate this problem, I would completely shield the 12A77 circuits and also the grid circuit of the 6AM5 by making a small shielded box under the chassis for these circuits. Valve shields may also be desirable. This will reduce the coupling from the p.a. to the 6AM5 grid.

To adjust the coil L1 and the tuning capacitor across L2 two holes in this shielded box would need to be drilled. I was not able to do this in my particular layout. To overcome this feedback in my own transmitter, I slightly mistuned the doubler coil whilst the crystal was out.

Incorporated in this transmitter is protective fixed bias on all stages bar the oscillator in the r.f. section. The doubler, driver and final receive negative fixed bias from the 6BQ5 bias line to protect or partially protect these

stages should drive disappear. The -12 volts is quite adequate for the doubler, some additional cathode bias will be needed for full protection of the driver and probably a doubler bias supply from the filament line giving -25 to -30 volts would be adequate for the final.

It will be observed that all stages have radio frequency filtering in some form to keep the r.f. from the h.t. supply line. The oscillator has a 15K ohm, the doubler a 2.2K ohm, the driver a 8.2K ohm and 2.2K ohm, and the final an r.f. choke, a 27K ohm resistor and a 270 pF capacitor. Keeping r.f. out of the supply lines is most desirable for stable operation. A 0.01 uF. is placed across the 6DQ6A heater and others could be placed across the heaters of the 6AM5 and 12A77 as additional precautions. The tune-up of the transmitter I will leave until later.

The transmitter is useable on a.m. and c.w. On c.w. the cathode of the final is keyed and h.t. is removed from the modulator and the modulation transformer is shorted out. The keying is probably on the hard side due to no shaping of the keying envelope; this could be corrected by using one of the keying networks described in the R.S.G.B. Handbook, or the A.R.R.L. Handbook or Radio Handbook by Editors and Engineers. It is quite probable that there is leak through of 53 meg. energy when the key is in the up position. The driver may also require keying. This transmitter was not designed for extensive c.w. working.

For a serious 6 metre c.w. operator, I would suggest that the driver and final both be grid block keyed, in this way virtually no 53 megacycle energy will leak through and appear in the output, plus it is much easier to shape the keyed wave form with this type of keying system. Due to limited facilities in regard to parts, I was not able to incorporate this system. A negative grid blocking bias of about -70 to -100 volts would be necessary.

Building this transmitter using good v.h.f. practice all the r.f. stages will be laid out in a straight line along the chassis. I would suggest that the oscillator stage be put in one corner of the chassis for ease of shielding for reasons given earlier.

TESTING AND ALIGNING

Assuming the transmitter has been built along similar lines to what I have done, the time has come to test and align the r.f. section.

L1 should be checked for response at about 26.5 megs. with a g.d.o. with the crystal out and the socket bridged with a capacitor of a few pF. If the coil is too large, turns will need to be taken off or the turns spaced to lower the inductance, remembering to keep about a 3 to 1 ratio of winding in relation to



COIL DATA

The value of the p.a. tuning capacitor could be doubled in value as the value quoted was the only one I had. The p.a. could be parallel tuned or a pi-coupler used, any of these being satisfactory on six metres. The operating currents of the final are shown later in this article.

The only precautions necessary with the modulator concern r.f. rectification on the grids of the valves. If the 12AX7 grid leads are shielded and the stoppers used on all modulator valve grids no real problem should exist. The microphone circuits should be kept well away from the r.f. section, particularly the final. One unsuspected cause of r.f. instability in a modulator can sometimes be attributed to the microphone lead being of a resonant length.

Some water readings and drains to expect. High tension should be about 3100 v. on m.m. and about 3400 v. on c.w. at the p.a. plate. P.a. current drain (a.m.), 115 mA.; c.w., 130 mA. Modulator current drain, 40 mA. idling, about 100 mA. full modulation. Modulator screen voltage, no modulation 300v. Oscillator drain 4 mA., doubler 12 mA., driver 24 mA. Drive currents, driver 0.3 mA., final 3 mA. Should this be in excess of 3 mA. to the final the value of the driver valve screen resistor could be increased and vice-versa.

Total current drain, full modulation, is about 270 mA. at 320 volts supply. This is being drawn from a supply nominally rated at 150 mA. 310 volts. No undue heating of the power supply is noted because of the intermittent nature of the load and the fact that the filament line is lightly loaded. The c.w. load is only 170 mA.

Now to the final. This will be dipped in the normal way with L5 inserted in the centre of the coil. The final I found harder to adjust to get good coupling to the aerial, etc. The values of the capacitors in the earthy side of the link coil will need to be varied to get proper

L1—5/16" diameter slug tuned former with 21 turns close wound enameled copper wire about 26 B. & S. gauge with a tap at 7 turns from the grid end of the winding.

L2— $\frac{1}{4}$ " diameter airwound, $\frac{5}{8}$ " long, with 7 turns 18 B. & S. tinned copper wire.

L3— $\frac{1}{2}$ " diameter airwound, $\frac{5}{8}$ " long, with 6 turns 18 B. & S. tinned copper wire.

L4—1" diameter airwound, 1" long, with 10 turns 16 B. & S. tinned wire tapped at centre with space for L5 to be inserted.

L5— $\frac{1}{4}$ " diameter, 2 turns closewound, spaghetti covered, inserted into centre of L4, 18 B. & S. tinned copper wire.

L6—3 turns wound over a 100 ohm resistor. 20 B. & S. wire.

One small addition that does make the transmitter a little easier to tune up is the addition of a small neon lamp of the NEZ variety to the p.a. coil. The neon is connected via a short length of wire and is mounted in a small rubber grommet in the front panel. Both wires of the neon are soldered together and it is only the capacity between the electrodes and the front panel which constitute the circuit for the neon. Tune the transmitter for maximum brilliance of the neon.

That completes the description of the transmitter. With an input of about 35 watts, an output of about 15 to 20 watts estimated is obtained, but I have no accurate method of measuring it. Input on c.w. is about 45 watts.

That completes the description of the transmitter which was built to communicate with Australia on 6 metres from Macquarie Island.

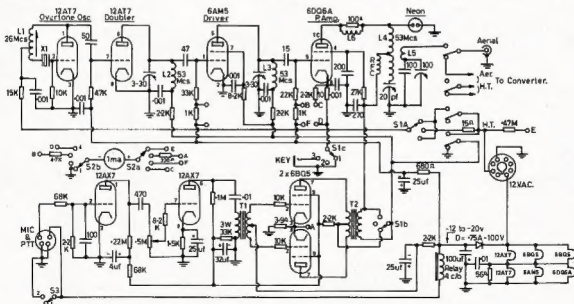


FIG.1. 6 METRE 35-45 WATT AM-CW TRANSMITTER.

S1—1, a.m.; 2, net; 3, c.w.
S2—1, h.t., 0-500v.; 2, mod., 0-100 mA.; 3, drive,
0-5 mA.; 4, p.s., 0-200 mA.

53—1, Receive; 2, Transmit.
Points marked "A" connect together; "B" to
other, etc.

SOLID-STATE MODULES*

For Valve Replacement in Communication Receivers

PART ONE

D. R. DRYDEN, G3BKQ

SINCE the introduction of transistors, many Radio Amateurs and S.W.'s have expressed great interest in the possibility of producing a solid-state communication receiver of satisfactory all-round performance, using an existing valve receiver as a basis. The advantages of transistors are well known, and in recent years they have proved to be better than most valves in respect of gain, noise and h.t. current drain.

Replacing valves with transistors directly is not practical because of the low input impedance of the transistor, the different nature of the neutralisation problem, and the necessity for complete re-organisation of bias and h.t. supplies.

The advent of the FET offered a possible solution, and the author therefore determined to re-examine the situation. In grounded gate, the FET has a low input impedance, which causes much the same difficulty in matching a tuned circuit as does the

● In this interesting series of articles, our contributor will show how valve stages in conventional communication receivers can be replaced by equivalent transistor units, made up as plugable modules having the same input-output characteristics as the valves for which they are substituted—thus preserving the general tuned circuit layout and parameters of the original receiver.

This is done by using a combination of FET and transistor, and he shows that these modules can be designed to take care of any usual circuit-substitution requirement. The practical ideas brought out in these articles constitute original work in the field of solid-state circuitry as applied to receiver design, and thus will be of great interest to many readers. Editor "Short Wave Magazine".

without altering the tuning and tracking characteristics. Furthermore, the circuit arrangement required is cut to a minimum.

It has also been possible to improve the gain, selectivity and a.v.c. characteristics, and reduce cross-modulation effects to negligible proportions compared with an original valve operated receiver. The modules are suitable for use in any receiver, car radios, and also 2 and 4 metre converters. In the case of the 2 metre converter, the noise

figure, gain and cross-modulation performance are outstanding.

Receivers may be modified one stage at a time if required, without affecting the performance of the remaining valve stages. This exercise was actually carried out by the author, to establish the complete interchangeability of the modules with existing valves.

The r.f. modules exhibit high gain, values of 300 at 30 Mc. and 80-100 at 144 Mc. being typical. Usually, if a valve is to be replaced by the device, the gain is reduced to the same as the valve to preserve the overall characteristics of the receiver. The stability of the device against temperature change, and in respect of neutralisation, is very high.

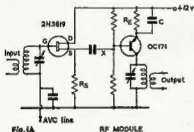


Fig. 1A RF MODULE

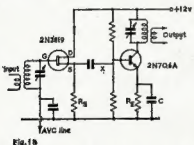


Fig. 1B

introduction of a transistor. In grounded source, neutralising a FET is rather difficult if it is to be used in a multi-band configuration, but the input impedance is better than with a valve.

The author therefore designed the plug-in modules discussed in these notes, using the FET as a matching device to produce a high input impedance. This drives a conventional transistor circuit which exhibits high output impedance. In this way, it is possible to utilise existing tuned circuits,

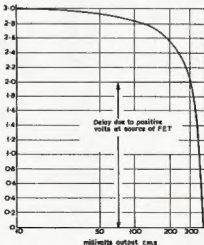


Fig. 1C

Fig. 1C.—In the r.f./i.f. module, this is the input/output curve showing the d.c. variation at gate to a.c. output.

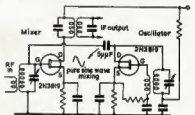


Fig. 2A

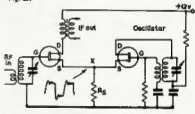


Fig. 2B

Fig. 2B.—The mixer/oscillator configuration shown in the lower sketch is not recommended because of the bad waveform at point X, which can produce unwanted beats up to 200 Mc.

To illustrate the application of the modules, this article will later include complete conversion data for the BC453/454 Command series of receivers. The ideas set out will enable a scheme of modification for any receiver to be evolved along the same lines. The BC series was chosen for illustration because they are in wide use for mobile applications, as Top Band receivers, tunable I.F.s on the 2 metre band, and (particularly in the U.S.A.) for main-receiver I.F.s in conjunction with xtal controlled converters. To illustrate v.h.f. applications, a description of a 2 or 4 metre r.f. stage is also included.

R.F. MODULE

The basic circuit of the r.f. module is shown in Figs. 1A and 1B. This will replace r.f. pentodes or triodes, e.g. 6AK5, 6SG7, 6K7, etc. The FET is

* Reprinted from "Short Wave Magazine," December, 1967.

operated as a source-follower, which is coupled to a PNP or NPN transistor as an amplifier with high output impedance. Since point X is at a very low impedance, the transistor does not need neutralising. The FET capacitance C_{10} forms part of the input tuned circuit, while C_{11} is reduced to negligible proportions by the voltage gain of the FET stage (0.9). In this way,

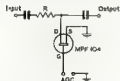


Fig. 3A

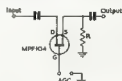


Fig. 3B

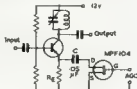


Fig. 3C

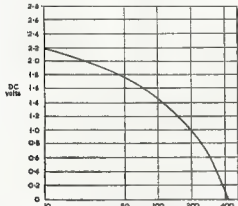


Fig. 3D.—The electronic attenuator mentioned in the text. The curve shows input/output in terms of d.c. variations to a.c. output at 2.5 Mc.

the isolation between input and output is, for practical purposes, complete.

If a.v.c. is required, it can be applied at the gate of the FET, Fig. 3C. This is possible because the voltage transfer characteristic of the FET is curved, due to the low value of the h.t. supply. An a.v.c. signal of $-3v$ produces a fall in gain of approximately 30 db. This control is best applied where the module is handling low-level signals (up to about 50 mV.) to preserve linearity. For somewhat higher levels, or more rigid control, another circuit (described later) is recommended.

The fixed gain of the circuit may be set by varying R_s , with suitable adjustment of bias to preserve the standing current through the transistor at a convenient level. To realise further gain, R_s can be wholly or partially bypassed. Up to 30 Mc., adjustment of the fixed gain over a range of 5-300 is feasible, if the coils have sufficient Q. At lower frequencies, around 465 kc., the coils have higher Q, and a gain of 800 can be realised. The h.t. supply is at 12v., and the recommended current per stage is about 1.8 mA.

The frequency limit of the device is set by the FET, and bipolar transistors are selected for a given application.

MIXER/OSCILLATOR MODULE

This bears a strong resemblance to its valve counterpart, the basic circuit being shown in Fig. 2A. This may be

used to replace any mixer-oscillator valve, e.g. 6K8, 6SA7, or separate mixer and oscillator stages in radio or communication receivers. One in the mixer is not troublesome, since the output circuit is tuned to i.f., and in any case, the mixer is highly non-linear. The transconductance of this stage considerably exceeds that of any comparable valve configuration.

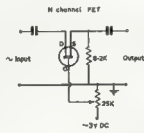


Fig. 3d.

A.V.C. AND MANUAL R.F. GAIN CONTROL USING FETs

In the past, the application of a.v.c. to solid-state amplifiers has presented considerable difficulty. Since the i.f. stages contribute virtually no noise to the total receiver noise with the configuration adopted here, it is feasible to use attenuators to control the i.f. gain. The bilateral properties of the FET below pinch-off make this type of control very attractive indeed, and this is the method adopted.

A FET can be used as a variable resistor by applying d.c. to the gate with zero d.c. voltage on the drain. Provided that the signal voltage on the drain is below a level which approaches pinch-off, this property is preserved. D.c.-controlled attenuators using this principle are shown in Fig. 3A (FET in shunt) and Fig. 3B (FET in series).

A further possibility is to make the FET part of the emitter resistor of a transistor amplifier which then becomes variable and so can control the gain of the stage. This arrangement is shown in Fig. 3C.

VARIABLE ATTENUATION

The circuit of Fig. 3A varies the attenuation over the range 0-60 db. for a d.c. swing of about 3v. However, the distortion of the input waveform is pronounced unless the signal level is very low, and its use would normally be restricted to r.f. stages. Since the noise figure is degraded as the attenuation is increased, its use is therefore not recommended, and other means have been employed in the r.f. stage. Distortion of course precludes its use in the i.f., where the circuit of Fig. 3B is preferred.

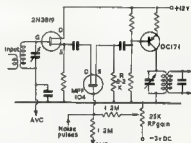


Fig. 4 RF module with gain control.

Figs. 3B and 3D: This circuit will provide an attenuation well over 60 db., but can only be used up to 2 Mc., owing to capacity effects. As the 60 db. attenuation is obtained for around 2v. d.c. swing, this circuit was adopted for the i.f. control. Noise suppressor pulses, manual gain control and a.v.c. may all be applied effectively to this device.

Examples of some of the transistorised module assemblies, of the kind discussed in the article, with a size comparison. They can be built up on standard valve bases to be pluggable replacements in the various stages of the receiver.



Fig. 3C: This will vary the gain of the transistor stage by 15-20 db. In a typical case, it is not frequency sensitive, and does not degrade the noise. The variable resistance of the FET in series with capacitor C alters the negative feedback due to R_a , the gain being maximum when the resistance of the FET is lowest. A swing of about 3v. d.c. is required.

PART TWO*

TRANSISTORISING A BC454

FIVE basic modules are used, one of each being required. They are: (1) r.f. module, (2) mixer module, (3) 1st i.f. module, with electronic attenuator, (4) 2nd i.f. module, (5) b.f.o. module. These are all depicted in Figs. 5, 6, 7, 8. The pin numbers refer to those used on the corresponding valve bases. These modules can be assembled on an octal valve base.

American metal-cased types of valve (e.g. 6SG7, 6S7, etc.) are easily stripped of their electrodes and leads, and the transistors and components then mounted on the base. The metal envelope is replaced to produce a well-screened unit. Examples of such assemblies are shown in the photograph in Part One of this article.

The audio amplifier is either constructed on fibre-glass board, and mounted in the rear of the receiver in place of the dynamotor, or constructed on the modular principle and plugged in instead of the 12A6 output pentode.

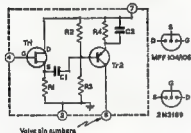


Fig. 5—R-f. stage and 2nd i.f. module, with connections to replace a 6SK7 valve. Values are: C1, C2, 0.001 μ F; C3, 3-5 pF; R1, 1 megohm; R2, 10K; R3, 22K; R4, 100K; R5, 1K; Tr1, 2N3819, MPF104 or MPF105; and Tr2, OC170/171.

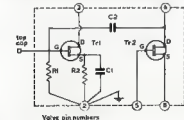


Fig. 6—Mixer and oscillator module, to replace 6SK7. C1, 0.001 μ F; C2, 3-5 pF; R1, 1 megohm; R2, 10K; Tr1, 2N3819 or MPF105; and Tr2, MPF104 or MPF105.

R.F. MODULE WITH GAIN CONTROL

A suggested practical circuit incorporating an attenuator-type control is shown in Fig. 4. The attenuator is introduced between the source of the FET and the base of the transistor to minimise side effects due to the introduction of the attenuator. It is recommended that this module should form the first i.f. of the completed receiver.

Continuing this interesting article, the author takes the example of the BC454—a well known surplus type, in wide use—to show how its various stages can be replaced, without undue complication but with results that can make even an old design like the BC454 into a very much better receiver, with improved gain and selectivity and a much lower inherent noise figure. This article should be read with Part One, so that all points are clear.

Alternatively, a cheap amplifier could be purchased, since there are several suitable ones available. The original BC454/circuit is modified as in Fig. 9, and indicates the location of the modules, and the extra circuitry required for the detector, a.v.c., r.f. gain control, etc.

All the heater leads are removed from the underside of the unit, together with the screen h.t. leads. All the suppressor connections are also taken off. It is strongly recommended that the potted capacitors be discarded, and only three of the existing resistors are used in the modified circuit. The b.f.o. coil is retained.

The r.f.-mixer-oscillator coil unit is removed by unscrewing the two retaining screws at the side of the chassis

and lifting it out to expose the coil plugs. These are disposed as in Fig. 10. A 2.5 mH r.f. choke is connected on the oscillator plug to the blank pin 4, using a covered lead. The other end of the r.f. choke goes to the 12v. h.t. line, via a zener diode. The coils may now be replaced.

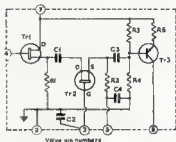


Fig. 7—First i.f. amplifier with electronic attenuator. Values: C1, C3, C4, 0.001 μ F; R1, 3.3K; R2, 5.2K; R3, 22K; R4, 100K; R5, 1K; Tr1, 2N3819; Tr2, MPF104; Tr3, OC170/171.

The 12v. h.t. line and decoupling networks are rewired and fitted according to the modified diagram in Fig. 9. Small resistors and condensers common to transistor radio practice are eminently suitable. The h.t. end of coils L2 (r.f. stage anode), L3 and L10 (i.f. coils) are earthed to the chassis.

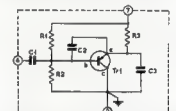


Fig. 8—The Vccr circuit b.f.o. module, excellent for short and long-term stability and specially suited to single-frequency working. C1 is 100 pF; C2, C3, 0.001 μ F; R1, 4.7K; R2, 10K; R3, 2.2K; and Tr1, OC170/171.

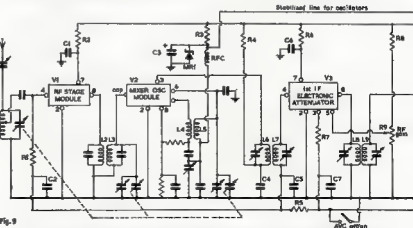


Fig. 9—Modified BC-454 Receiver, showing modules as follows: V1, r.f. stage; V2, mixer/osc.; V3, 1st i.f. and attenuation; V4, 2nd i.f.; V5, b.f.o. module; and V6, transistor amplifier. Note: Only added components are shown here. Parts differing from the original are shown numbered. R.F.C. is a 2.5 mH r.f. choke. A pair of PP1 batteries (5v. each) will suffice for power.

* Reprinted from "Short Wave Magazine," February, 1966.

A.v.c. is applied to the r.f. stage and to the first i.f. stage, as shown in the diagram. The b.f.o. coil is removed and an additional 220 pF. condenser is connected in series with C27 across the coil. The b.f.o. coil is then replaced, also this winding has a lead connected to pin 6 of V7, which is retained. The remaining leads are removed, and the end of the coil earthed down, as in Fig. 9. The remaining modifications are self-evident, and although the job looks complex, in practice it is easy and quick once the modules are assembled ready to plug in.

CHECKING CURRENT DRAIN

Check the h.t. winding carefully, and switch on the h.t. (12v. d.c.) with no modules in place. Check the h.t. current, which should, at this stage, be about 10 mA. Then plug in the modules one at a time, starting with the r.f. module. The current increments should be as follows: R.f. stage, 1.8 mA.; mixer-oscillator stage, 4.0 mA.; 1st i.f., 1.8 mA.; 2nd i.f. stage, 3.0 mA.; audio amplifier, 1.5 to 3.0 mA. (for the recommended circuit). The total current should be about 17-20 mA. with no signal applied to the receiver.

If the aerial is now connected, the r.f. and audio gains turned up, and a.v.c. applied, it should be possible to tune in a signal. Select a weak one, and peak the i.f. coils. The tracking of the oscillator coils will be unchanged, but the input trimmer and mixer trimmer will require adjusting to give maximum output. The alignment is now complete.

A strong signal will increase the current drain to 100-150 mA. due to the class B audio output stage opening up. Owing to the great increase in selectivity, tuning will be very sharp. Also the noise figure of the modified receiver will be much lower than the original, which can be deceiving. Disconnecting the aerial seems to leave the set dead. However, a short length of wire connected to the aerial socket will immediately produce an output. The BC454 is particularly useful as a tunable i.f.

amplifier for a 2 metre or 70 cm. converter.

Note that the above procedure calls for weak signals to be located at maximum r.f. gain, a.v.c. A very strong signal will reduce the gain of the set by 100 db., a.v.c. on. The range of the manual r.f. gain control is around 32 db. If a single module is used to try out the effect of the modification of a single stage, care should be taken to disable the a.v.c. applied to the module. Valve receivers require a very much higher a.v.c. voltage than do the modules, and if the existing a.v.c. is applied, the module will probably be almost cut off, and its performance will appear disappointing. As the number of modules is increased, this problem becomes less acute.

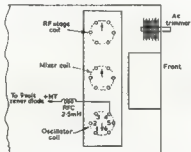


Fig. 10 Underside of BC454

Fig. 10.—Underside of BC454, to locate items mentioned in the text

The overall gain attainable exceeds anything which can be realised using valves, but owing to the existing layout of the coils, the usable gain is limited by regeneration problems. As described, the modified set produces useful output for less than 1 μ V. in.

A 2 metre conversion for the r.f. stage will be shown later. This circuit produces a gain of 80-100, with a noise figure of around 2 db.

1968 John Moyle Memorial National Field Day Results

SECTION A—SIX-HOUR DIVISION

Award Winners		474 points
VK2ASZ/P	.....	20 "
VK3JO/P	.....	131 "
VK4PJ/P	.....	184 "
VK5TN/P	.....	129 "
VK6ZFY/P	.....	129 "

Other Entries		124 points
VK2ZCF/P	.....	45 "
VK2RJ/P	.....	75 "
VK5ZEJ/P	.....	43 "
VK5TL/P	.....	10 "

SECTION B—SIX-HOUR DIVISION

Award Winner		87 points
VK2ZJM/P	

Other Entry		36 points
VK2YB/P	

SECTION E—SIX-HOUR DIVISION

Award Winner		80 points
VK2ZO	

SECTION A—24-HOUR DIVISION

Award Winners		115 points
VK1VP/P	.....	134 "
VK3AMK/P	.....	493 "
VK4IO/P	.....	523 "
VK3QX/P	.....	80 "
VK7ZKJ/P	.....

SECTION B—24-HOUR DIVISION

Award Winners		193 points
VK3EZ/P	.....	202 "
VK5ZF/P	.....

SECTION C—24-HOUR DIVISION

Award Winner		502 points
VK2BCC/P	

SECTION D—24-HOUR DIVISION

Award Winners		8400 points
VK2AAR/P	.....	2140 "
VK3ATL/P	.....	253 "
VK6ZBF/P	.....

Other Entries		1534 points
VK3LC/P	.....	1342 "
VK3KO/P	.....	223 "
VK3RV/P	.....	249 "
VK6ZFG/P	.....

SECTION F—24-HOUR DIVISION

Award Winners		534 points
VK2—P Linsly	.....	631 "
W1A-L3308	.....	755 "
W1A-L5088	.....	515 "
W1A-L7031	.....

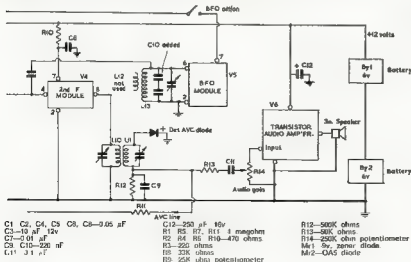
Other Entries		485 points
W1A-L3042	.....	715 "
P. Forbes	.....	200 "
W1A-L5097	.....

Incorrect Logs
L. Milne, D. Lloyd

Check Log
VK3TB

SLOW SCAN T.V.

A sizeable group of Canadian Amateurs in Ottawa are interested in slow scan t.v., according to VE3PW. The system used allows signals to be recorded on tape and played back through a monitor scope, or viewed direct on a 5BP7 tube. The group is building monitor scopes as described in March 1964 "QST". The address of VE3PW is 191 Clare St., Ottawa 3, Canada. Interested Amateurs are invited to write to him.



C1 C2, C4, C5 C8—0.05 μ F
C3—10 nF 12V
C7—0.01 μ F
C9, C10—220 nF
C11 31 pF

C12—250 pF 10V
R1 R5, R7, R11 1 megohm
R2 R4 R6 R10—470 ohms
R3—220 ohms
R8 33K ohms
R9 25K ohm potentiometer

R12—500K ohms
R13—50K ohms
R14—250K ohm potentiometer
M1 1 μ V. zero diode
M2—0A5 diode

Some Thoughts on "V-V" Beams for 14 and 21 Mc.

C. WHALLEY,* VK6KK

Whilst paying a visit to England in 1964 I heard stories of a rather new type of antenna which, according to rumour, was working DX extra well.

Tracking down the designer, Neville Jackson, G3IAD, I made my way to his home only to find that he had left for abroad a short time previously. I talked with his wife and also examined, as best I could, his 14 and 21 Mc. antenna in the back garden of his home. I purchased the small booklet he has written on this type of antenna for the Amateur bands and later came back to my home in Western Australia.

Owing to working in the far north of this State, I was unable to build one according to his directions until mid 1966. This was built to the following dimensions:—

14 Mc.—

Driven Element, 36 ft. 4 in. total length.

Director, 34 ft. 5 in. total length.

21 Mc.—

*Driven element, 23 ft. 7 in. total length.

*Director, 22 ft. exactly total length.

(* The measurements given do not agree with the ones in the booklet, but were found to give the s.w.r. figures given later.)

The elements are made from aluminium tubing, fitted in fishing rod style, and mounted as suggested.

This was put on the air and the DX started to be worked as quite never before with many complimentary remarks about signal strength from my 146 watts p.e.p. Unfortunately, after about three months the vees started to lean over and whilst this made no apparent difference to the working of it, I could see that before long the whole thing would collapse.

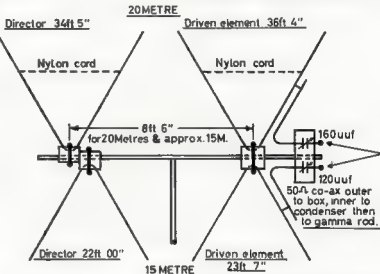
STRENGTHENING THE VEE

After much thought and talks with others about how to build it strong enough, the following course was adopted.

The two pieces of aluminium tubing that were to be bent in the form of the vee for the base of the 14 Mc. section were obtained in fairly thick gauge tube, 4 ft. long. A piece of solid aluminium rod which fitted neatly inside this tube was obtained, this was 3 ft. long and was centred inside the 4 ft. length. The whole then being cold bent to the angle of 90 degrees. The other lengths of tube were then packed with wood dowselling rod before being screwed into position. Remember that you have over 17 ft. on each leg poking up skywards with its only support at its base.

The previous method of using aluminium plates to fasten the vee to the boom was abandoned and aluminium clamps of the type used by scaffolding erectors were obtained, packing pieces made to fill up the extra width of the

clamp taking the base of the vee, and then the vees were mounted. The clamps were screwed up tight and a bolt passed right through the clamp, the packing pieces, the base of the vee and the boom, a nut was put on the bolt and tightened. A nylon cord was placed across each of the upper vees (the 14 Mc.) about 4 ft. from the top (this makes no difference even in heavy rain) and after around six months' use, with some gales, etc., to test it, it is still in position apparently as firm as ever.



MORE DETAILS

There is no insulation whatever between the vees, the boom, and whatever the boom may be fastened to (plumber's delght type).

The driven elements are fed each with its own gamma match, fed by 50 ohm co-axial cable. For the 14 Mc. section the gamma match feeder from the box is kept around 5 inches away from the element it is feeding and feeds into it 4 ft. (approximately) up the leg. For 21 Mc., the same distance between the feeder and the element, but this feeds at 3 ft. (approximately) along the leg.

The boom is 10 ft. long to allow for the gamma match box, etc., and the distance between the director and the driven element is 8 ft. 6 in. This distance is the same for both 14 and 21.

When having the portion forming the base of the vee bent, have a six inch piece in the centre left straight as the clamp will fit around this for attachment to the boom.

S.w.r. on 14.250 Mc. is 1:1; at 14.010 Mc. it is 1:1.8. On 21.500 Mc. it is 1:1.

Much interest was aroused when this was first erected and the old solid question was, "How does it compare with other beams?"

This may help to answer.

With my friend VK6SM, whose home is about 150 ft. above sea level with a beautiful clear "getaway" in all directions, and who uses a 3 element full length close spaced Yagi for 14 Mc., on a 34 ft. high tower, tests were made with VK5, VK7 and W6. They were not told any details but just asked to give S meter readings. In all cases the reports were identical. This, despite the fact that my home is only about 10 ft. above sea level, in a hollow with trees right across the Eastern side (the

way we were pointing for these tests) which are much higher than the antenna. The boom is 24 ft. above ground. We were, of course, both using the same power.

This short summary has been made owing to the number of requests for information from many sources. There are now three of this type working in the Perth area and the general opinion is that it is the best tried up to now.

My sincere thanks go to Mr. Jackson, G3IAD, for giving me the details of what has proved to be the best DX antenna I have ever used.

More detail than I have given is to be found in Mr. Jackson's booklet, "V-V DX Arrays" which can be obtained from Vee Vee Beams Ltd., Morcambe Lincs., England.



* 53 Arnott St., Trigg Island, W.A., 6022.

MORSE CODE PROFICIENCY (OR WHY "GOOF" AT 10 W.P.M.)

Some time ago, an article appeared in a popular magazine in the States, headed "Why I never even made it, at 10 w.p.m." (10 w.p.m. is the General Requirement.)

Sadly, here in Australia, there are probably several Johnnies who will "Goof" at 10 w.p.m. in the coming Code Examinations. Why? Let's look at a few of the reasons why, and for the sake of simplicity, divide the comments into receiving and sending.

RECEIVING THE CODE

Receiving is obviously the bigger stumbling block, but need not be so at all, if one's mental approach is right. Those who sit down anxiously to learn the Code (not just fiddle with it), must adopt the right psychological attitude to the task at the outset. The mental habits formed during this early period of 10 weeks or so, or prior to this, go a long way to make the passage to the ticket, and beyond, plain sailing. Too many, at this beginning stage, exhibit what might be called a "Bogey Syndrome", or a mild Morse neurosis—and it is this that beats even as they've begun. Attitudes of tension, timidity and inferiority complex are felt within, and manifest themselves externally, as every Morse class instructor knows.

The "Bogey" expression, "I'll lick this thing if it kills me", is hardly the correct mental approach. It indicates that the user sees the matter as something to overcome, or to prevent it, or to surmount obstacles. In truth, he is trying to visualise himself achieving too much, too soon, subsequently, he lacks confidence. A young child is physically confident to walk by word, or step by step, but very easily and often quickly—amplify because it has no subconscious inhibiting reactions to prevent it, or to slow it up. Any beginner at the code will come along much faster if his doubts and tensions to it are resolved at the start. These inhibitions, or "Bogies", can be removed, prevent any progress at all. This is where it is of prime importance that starters have access to a competent teacher, who can give him the ability to impart confidence and correct procedures. True, many by dint of their own determination are completely self-taught operators, but many lack the know-how, partly because no one was at hand to get them started sufficiently.

So, to you, who are about to take the code test, the following pointers might help a little.

Firstly, don't set yourself a definite time limit, say, six months. This is the first "Bogey" to be mentally cast aside. You will progress at your own natural pace, depending on the amount of practice, etc. It may take six months.

Next, when about to receive code, be certain you are physically comfortable—unless you are, your concentration will suffer, be you aware of this or not.

Then, don't attempt long practice sessions. Knock off immediately the mind begins to boggy at the "dits and dahs". Best practice method is a little, and often; perhaps two or three fifteen-minute sprints per day. A common complaint, is the self-criticism "I can't concentrate for long." This obviously creates another "Bogey" in the mind of young aspirants. It is usually correct, but only for a few times, you will cope well enough, if you've practiced enough. It must be remembered that the ability to concentrate is not a static, or a personal thing, with its broad basis in heredity-environment complex. If your daily bread-winning work does not require too much concentration, the very least of the code will well the you easily. Even those whose working life is mostly concentration can often only apply this ability to concentrate to a limited extent, as you progress, this will give you no concern, but do not attempt to learn code when feeling mentally fat.

Another "Bogey" Many learners express their inability to copy code more than a letter or two, behind the sender. They point out that the pro can trail a whole sentence, or more, in the letter. It is unpractical and a useless obstacle in the minds of beginners. Here again, they are slowing their thinking to wander into paranoias they've yet to meet. The answer is to start out by hearing a code letter, dit-dah-dit. This must be transformed by conscious mental effort into the letter "A". The unpunctuated and unuttered mind does this, at first, slowly and ponderously. Only the old pro on hearing "dit-dah-dit" transforms it into the mental letter, but, by dint of prolonged practice, there is no conscious

justpostponing in the mind at all—in other words, it becomes automatic and flows off the end of his pen, just as all other habits become effort.

After listening to many troubled comments on this, it is apparent that this, too, is a personal thing. Some minds are just more computer-like than others, i.e., more adept at this necessary transformation. Herein lies the ability of some to receive at 50 w.p.m., whereas others will never exceed 30 w.p.m. (which is quite fast enough). But this is no argument to say that 50 w.p.m. is not attainable. It is, and only so, but with more practice, perhaps. If progress seems slow over six months of honest application, there is no reason to despair, because code proficiency has a habit of taking on coherence rather suddenly when it does commence. In other words, the mind eventually gets the message.

Individual and Personalized Instruction: This is the only way for the initial beginner but, for so many, it is unfeasible, such as 100 to 1 country area, etc. So only the best alternative arrangement can be made. Having grouped the dit-dahs of the alphabet to the points of correlating the simplest words, one should for optimum progress, be coached along at a speed slightly in excess of what one is comfortable with. Just fast enough, so that not every letter is received.

When a letter is missed, don't fiddle with it. Leave the track, dampening the speed, and instantly preparing the mind for the next. At first you will probably lose two or three in a row, but do not be deterred. Try and receive original copy of the time. Half-line paragraphs or sentences are useless in speed promotion.

The cliché "That anything worth having requires effort" applies truly to code mastery. If you want your ticket, manual practice is needed—and daily.

Considerable time, if you are ill prepared, you will take with you into the "dark" of horrors—a psychological barrier a mile high. Known to many as the "Bogey", this barrier can be overcome by the use of the diagram, which reduces your efficiency. Why? Your worst self apart internally like this when to sit well to the receiver, to know that you are not if you don't produce your best effort on the day. There's no more comfortable and comfortable code operator.

It would be necessary to be able to receive word perfect 12-13 w.p.m. for at least three or four weeks prior to the test to be sure of 100 per cent copy at 18 w.p.m. in a strange environment.

SENDING

After observing some at work at the key it is obvious why the "on air" effort brings the advice "Try the left foot." It seems unbelievable, but many don't monitor their own keying. They are not using the foot, and the relation can remain congenial and copiable under these conditions of sending. If you are going to send code correctly, you must monitor it. It will be necessary to monitor every dot and dash, and develop the objective habit of being your own harshest critic in the process. Never imagine you will receive better results if you adapt where a monitor is no longer a must.

It is wise when at practice to simulate exam-room conditions. Use a very small, portable earphone copy (not speaker), with an audio oscillator at 1 kc. or a little higher and with the volume at its comfortable lowest. Excessive dB. is of no help. If only produces a "limiter like" effect in the ear drums. The P.M.G. type key should be mounted at the top of the key, so that the key is at eye level, and if you can if preferred operate the key in a position best suited to you (such as those with some slight physical handicap).

Assuming you are right handed (reverse the procedure for left handed), sit facing the key so that the shaft is pointing just past your right side and when you reach out to touch the key, your arm is straight, and the shaft is horizontal and the angle formed by the elbow 90 degrees or a shade more. The elbow should not be tucked under the arm, but the arm away from it. Just let it hang in a neutral position. Never sit too low so that one has to reach up for the key. This quickly produces shoulder tension, and the arm becomes too high than low. Key patting and bar spring tension should be set at an optimum position, i.e., there should be no effort to produce forearm tension in an effort to control

it, nor so gappy and springy as to make key manipulation hard work and choppy. Forearms and wrists differ so radically in weight and strength that one must make adjustments to the right setting for smooth sending.

Here again the same rules of concentration apply. Immediately the arm or wrist shows fatigue—stop. In the beginning this will happen within minutes, but practice produces surprising stamina.

Don't try and force yourself into speed—this is a fatal error. Start by sending one letter at a time, with a slight pause between. Like the young child learning a new language, pace simply comes as the result of practice.

The habit of correct character formation must be developed right from the start, and of course for optimum results, as stated before it is best if one has a professional operator to point out and correct mistakes. Sloppy sections of practice sending are to be avoided. There will be unmistakable overtones of it remaining in a fist for a long time afterwards.

When in the exam room take your time to get comfortable. Relax what you have to send and make sure you can mentally cope with any rarely used characters such as the "Z" sign, etc. Adjust the key to your own liking. A little practice run to be avoided before, if you are well prepared it should be a "piece of cake".

A FINAL COMMENT OR TWO

Rhythm sensitivity is a great asset in receiving code. Test yourself with someone who has a musical instrument. Get him to send "minima" and "semibreves" in lots of four or more and try yourself out repeating the long and short of it. It is fun, but there is the individual who is rhythmically dead.

To facilitate the effort of mentally turning dit-dahs into letters, some try what might be called the "phonetic" method. This is the "phonetic association of sound." It works this way. Instead of repeating the alphabet to oneself in dit-dahs (never dot-dahs, please), one can repeat the alphabet in a readily particular dit-dah combination, such as the letter H as Bee-b-b-b; for M, Mm-mm, or for N, Nn-nn, etc. This is a good thing for beginners only. I doubt its value, when one has to increase speed.

Lastly, each day as you go about the bread winning work, take time to observe the world as a galaxy of signs, ads. on hoardings, street names and other directions of all sorts. These can be used to improve our code. Run through the "dits and dahs". It's splendid mental practice or conditioning.

If you are still unconvinced by what we say it is at 10 w.p.m., take heart from the V.Y.M. who reputedly said thirteen times before he made it. (This probably has been stretched a little by the "on-air" boys.) Depend on the word of respect for his intention, courage and determination gave it to him.

At the other end of the scale is the 28 who is a "pro". He made it at 28 w.p.m. with a scratch. He was a professional musician of high ability.

All the above is meant only as a pointer on the way. There are many more to make the code exam easier. Two more can be said but obviously space does not permit.

There is one LAST word for Morse Code Proficiency, it's "PRACTICE".

—Alan Shawsmith, VK4KH.

"CONCURSO MEXICO 1968"

Freely Rules for Mexican Contest

Aim: To contact as many Mexican stations as possible. Note that prefixes 441, 442, 443, etc., may be used in place of XE1, XE2, XE3, etc. XE4 through XE8 are expected for the Contest.

Time: 0901 hours GMT, 31st March, 1968, to 2300 hours GMT, 31st December, 1968. Stations in the U.S.A. and in the U.S. Cross-band contacts are not valid but the same station may be worked on different bands.

Mode: C.W., A. Sides in U.S. and in U.S. Cross-mode contacts are not valid. However, each station may be worked on each mode on every band except that s.b. and a.m. will be considered.

Scoring: One point per valid Mexican contact. Logs: Logs must contain call, date, band, mode, and time. Send to L.M.C.R., Benito, Mexico D.F., Mexico, before 31st March, 1969.

IMPORTANT RULES CHANGE FOR W.I.A. W.A.S. AWARD

New rules for the W.A.S. Award will apply as from 1/7/68 and no further applications will be accepted under the old rules after 30/6/68. The following is the full text of the new rules and intending W.A.S. applicants are requested to read these through carefully before making their application.

W.I.A. WORKED ALL STATES (AUST.) AWARD

OBJECTS

1. This Award has been created in order to stimulate interest in the v.h.f./u.h.f. bands and is of a high standard to fully acclaim the proficiency of the recipients on their achievements.
2. This Award, to be known as the "Worked All States (Aust.) Award", will be issued to any Amateur in Australia or overseas who satisfies the conditions following.
3. A certificate of the Award will be issued to applicants who show proof of having made two-way contact with the specified areas of the Commonwealth of Australia. Additional credit will be given for proof of contact with overseas countries, viz. New Zealand or Papua Territory. Countries, for the purposes of this Award, are set out in the Australian D.X.C.C. Countries List.

REQUIREMENTS

- 2.1. Contacts must be made on the v.h.f./u.h.f. bands 52 Mc. and above (Bands 8 and 9). Contacts made on 80-82 Mc. prior to 1/8/64 will count towards the 52 Mc. Certificate.
- 2.2. One verification from each of the following areas of the Commonwealth of Australia is required:
 - (a) Australian Capital Territory.
 - (b) New South Wales.
 - (c) Victoria.
 - (d) Queensland.
 - (e) South Australia.
 - (f) Western Australia.
 - (g) Tasmania.
 - (h) Northern Territory.
- 2.3. In all, eight (8) verifications are required.
- 2.4. If it is possible under these rules for one applicant to receive one Award for each of the Authorized Bands between 20 and 3,000 Mc.

OPERATION

- 2.1. All contacts must be two-way contacts on the same band and crossband contacts will not be allowed.

- 2.2. Contacts may be made using any authorized type of emission for the band concerned.
- 2.3. Portable operation will be permitted provided that the portable location shall be in the State in which the licence was granted and in the call area in which the licence was granted in the case of overseas operation.
- 2.4. All contacts must be made in accordance with the Regulations laid down in the "Handbook for Operators of Radio Stations in the Amateur Service" or its successor for Australian stations or in accordance with these Regulations applying in the country of the applicant in the case of overseas stations.

VERIFICATION

- 4.1. It will be necessary for the applicant to produce verifications in the form of QSL cards or other written evidence showing that two-way contacts have taken place.
- 4.2. Each verification submitted must be exactly as received from the station contacted, and altered or forged verifications will lead to the disqualification of the applicant.
- 4.3. Each verification submitted must show the date and time of contact, type of emission and frequency band used, the report and the location or address of the station at the time of contact.
- 4.4. A check list must accompany every application setting out the details for each claimed station in accordance with Rule 4.1. If any contacts were made whilst portable, this must be stated and the portable location given. The applicant must also state whether they are members of the W.I.A. or not.

APPLICATIONS

- 5.1. Applications for membership shall be addressed to the "Federal Awards Manager, GPO Box 3811W, Melbourne, Vic. 3001," accompanied by the verifications and the check list with sufficient postage enclosed for their return, registration being included if desired.
- 5.2. A nominal charge of 25c, which shall also be forwarded with the application, will be made for the issue of the certificate to successful applicants who are non-members of the W.I.A.
- 5.3. Successful applicants will be listed periodically in "Amateur Radio" Members wishing to have their verified country totals listed over and above those submitted.

mitted at the time of application for membership, will notify these details, in writing, to the Federal Awards Manager.

5.4. In all cases of dispute, the decision of the Federal Awards Manager and two officers of the Federal Executive, W.I.A., in the interpretation and application of these Rules shall be final and binding.

5.5. Notwithstanding anything to the contrary in these Rules, the Federal Council of the W.I.A. reserves the right to amend them when necessary.

NEW CALL SIGNS

FEBRUARY 1968

- VK1WL—L. R. Hodge, "Lawley House," Barton, 2805.
- VK1ZAV—D. R. Avdall, Cottage 40, H.M.A.S. Harman, 2550.
- VK1AHS—N. E. Parsons, 120 Ashley St., Chatswood, 2057.
- VK1BEN—J. M. Winsor, 8/52 Musgrove St., Mosman, 2058.
- VK1BKN—A. K. Nikku, 39 Cambridge St., Casley Heights, 2186.
- VK1BRK—R. M. Kenney, 6 Kurnell Rd., Cronulla, 2230.
- VK1ZJB—J. S. Brown, 5 Kentwell Ave., Thornleigh, 2120.
- VK1ZJO—A. H. B. Brodick, 18 Rhoda Ave., Wager Wagon, 2650.
- VK1ZVU—J. Trening, 48 Bexley Rd., Campsie, 2191.
- VK1AHP—J. M. Hamilton, 37 Byfield St., Reservoir, 3073.
- VK1ZVO—A. A. Saunders, 398 Buckley St., Essendon, 3240.
- VK1ZGD—D. J. Galloway, 73 Charlotte St., Alkenburg, 3621.
- VK1SAV—E. J. Mulholland, 19 Stuart Rd., Dulwich, 5005.
- VK1SGO—H. E. Rhodes, 797 Canning H'way, Kingsmead, 5055.
- VK1ELD—A. A. Daney, 34 Clintworth Way, Koonagalla, 6055.
- VK1STW—R. P. P. Flat 118A, Graylands Hotel, Alfred Rd., Graylands, 6010.
- VK1RY—R. L. Johns, Station: Let 1, Section 22, Goro Goro St., Buroko, P. Postal: Public Service Commissioners Dept., Konedobu, P.

CANCELLATIONS

- VK1RJ—R. L. Johns. Now VK1RY.
- VK1ZSW—A. S. Wright. Not Renewed.
- VK1WL—L. R. Hodge. VK1WL.
- VK1BCK—J. K. Ridgway. Deceased.
- VK1BKN—A. K. Nikku. Now VK1BKN.
- VK1BEN—Benalla High School Radio Club. Not Renewed.
- VK1PC—R. E. W. May. Transferred to N.S.W.
- VK1QD—G. E. Evers. Deceased.
- VK1AMG—J. M. Barry. Not Renewed.
- VK1AAS—East Sale R.A.A.F. Radio Club. Not Renewed.
- VK1ZGL—R. F. Lloyd. Not Renewed.
- VK1ZON—A. T. Farrell. Transferred to S.A.
- VK1ZCG—McG. McCullough. Transferred to N.S.W.
- VK1ZCQ—J. A. McLachlan. Transferred to New Guinea.
- VK1EF—P. Field. Not Renewed.
- VK1ZAH—J. D. Holt. Overseas.
- VK1ZGA—L. N. Smith. Transferred to N.S.W.
- VK1ZBB—A. H. B. Brodick. Now VK1ZJO.

OBITUARY

LEN SAWFORD, VK1LF

The VK3 Division regretfully announces the passing of Len Sawford, VK1LF, early in April.

A member of the 1932-33 Council, holding the position of Technical Officer, later becoming one of the three Divisional Trustees, he was extremely active in the early days of "1400 recipients" and the like. Although he transferred his interest and activities to the audio side post-war, he still remained keenly interested in the VK3 Division, and at the time of his death, was seriously considering returning to activity on the air in view of his coming retirement.

A keen Rotarian, his quiet and unassuming manner won him many friends, and to his surviving wife and family, the VK3 Division extends their deepest sympathy in their bereavement.

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W.A.A.F.

Sub-Editor, CYRIL MAUDE, VK3ZCK
2 Clarendon St., Avondale Heights, Vic., 3034

Well firstly I must apologise for the brevity of the notes this month, but owing to a rapid increase in cost of printing "A.R." and the reluctance of other Divisions to assist in meeting these costs, "A.R." will be greatly reduced in size until such time as more finance is available.

Generally conditions have been poor with only scattered DX activity. The most interesting news of late being the 146/438 Mc. transmitter unit that was raised by balloon to 125,000 feet and enabled Adelaide and Melbourne stations to work each other.

73, Cyril VK3ZCK.

WORKED ALL STATES AUSTRALIA AWARD
V.h.f. operators are reminded that new rules will apply to this award as from 1st July, 1968, and intending applicants should read carefully the new rules listed elsewhere in this issue.

No applications under the old rules will be accepted after 30th June, 1968.

—Geoff Wilson, VK3AMK, Awards Manager.

HUNTER BRANCH

146 Mc.: This band has been quiet, not much about, our only DX—Sydney—is even rising. The conditions on the whole have not been the best. Only Monday night is really active.

54 Mc.: There have been two openings during April—the 1st and 15th—both to VK3 and Bill VK3ZWM being the only lucky one at this end. During both openings, VK3s were working, but the conditions were very poor with little activity. 13, Mac VK3ZMO.

VICTORIA

The April meeting of the V.h.f. Group was chaired for the first time by Gill VK3ZGS, who introduced the first speaker, Les VK3ZBJ, who gave a short talk on the Australian development. He then showed the working unit. David Wardlaw followed with an interesting talk on the Intruder Watch in Australia. General business brought the announcement of the change of name of the "Converter Committee" to the "Projects Group". Over two hundred sets for the 1 metre converter were distributed throughout VK and ZL and with ideas for future kits, not essentially converters, a change of name and set up was thought to be needed.

Melbourne v.h.f. population was surprised when the call G0JBS was heard on 144.8 m.m. It was soon found out that Brian is a Maritime Mobile station on the ship "Hunting Don," which sails the Pacific. So if you hear him on give him a call and welcome him into the reg chev.

Alan VK3ZEO spent a short time during Easter in Melbourne and made his presence felt on 2 metres a.m. Now back in VK3, Alan listens on 2 every night for DX from Melbourne, so remember to give him a call.

Gavin VK3AEJ is now resident in Melbourne and active on 2 m.m. a.m. This will only be temporary as Gavin believes he will soon take out a VK4 call from Wilds Island in the Pacific using h.f. and 6 metres a.s.b.

Col VK3PO, who lives in Maldon, would be pleased if a couple of the boys who have a mobile 3 metre gear would make a trip to Maldon some week-end. The object is to try an experiment with the terrain in and around the district. If there are any "taken" on the trip they can get in touch with Col either by letter or phone on Maldon 75-3345.

73, Robert VK3PXX.

Eastern Zone.—The Gippsland boys are slowly making more use of the 6 m.m. net, frequency 13.023 Mc. This will only be temporary as the month included VK3ZGZ, Moe, VK3UG Warraful, VK3AOJ and VK3ZDP Seie. The following stations have been working on the net: VK3ZG 3 Mt. Butler, VK3ZVK, VK3ZPK, VK3ZVP 3 Mt. Dandenong, and VK3ZXP 3 mobile in Gippsland.

However, no Interstate or overseas DX (in or out of band) has been logged or worked, even though George has spent many daylight hours listening. M.u.f. was peaking to 44 Mc. on March 28 and April 27.

The 2 m.m. f.m. nets have been very busy, especially during the Eastern Zone Convention week-end (April 30 and 1) at Mirroon North. VK3AMK was the control and talk-in station, working 20 mobiles using both the 6 and 2 m.m. nets. Les VK3ZBJ gave a very interesting and informative lecture, demonstrating solid state v.h.f./u.h.f. techniques, problems and the traps to watch out for. For competitions, we had 8 and 2 m.m. scrambles and a 2 m.m. hidden tx hunt.

A keen interest is being shown with the Australia "Highball" series of experiments. Firstly, using the experimental Ch. B1 transmitter, and secondly, VK3ZGZ Morwell was heard and was heard with difficulty VK3 Melbourne, Geelong and VK3 Adelaide stations via the Australia balloon 146/438 Mc. transmitter over Mardura. Signals faded out in Gippsland at 0225 hours (12th March). The zone looks forward to the next test in the series. 73, George VK3ZCG.

.....

Correspondence

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the Publishers.

"A.R." MAGAZINE

Editor "A.R.," Dear Sir,
I was amazed to hear on the VK3WJ broadcast of the possible ending of the publishing of "A.R." I quite realise that it must be maintained as a commercial proposition and kept within a budget. However I feel, and it is the opinion of many Amateurs with whom I have spoken during the last week, both on and off the air, that the loss of "A.R." would have very drastic and far reaching results.

Apart from the very obvious lack of news and information which would occur, all those with whom I have discussed the matter feel that many W.I.A. members, especially those in the country will take the attitude that there

is very little point in remaining members of the W.I.A. if they don't even get a magazine for their yearly sub.

As the number of members is only about half the number of those with A.O.C.P. or A.O.I.C.P. we feel that this could weaken the W.I.A. to a point where the whole structure would be weakened by smaller membership. This we simply cannot afford and especially at this stage when the number of Amateurs is on the increase and new operators need to be kept informed of the W.I.A. and its activities. The potential for growth is there, and it can be directed in the right manner. Also, if the present very efficient set-up for "A.R." was to break up it would be very hard to get things moving again at a latter date and the valuable experience of the past would be lost.

Even if some other W.I.A. funds had to be diverted to maintain "A.R." until such time as it could hold its own or a price rise be agreed to, I feel that the importance of "A.R." is such that it must be kept at any cost. It is rather a strange thing to think Amateurs will think nothing nowadays of spending \$700 on a transmitter, perhaps \$200 on no aerial, \$200 on a lower, \$300 on a rotor, etc., etc., BUT are not prepared to pay a few extra cents towards their own magazine. If "QST" or "CQ" etc., push their price up 30 or 35 cents you don't hear any complaints from the locals, yet by comparison the value of the material in "A.R." is far greater to the local operator than the overseas magazine, as apart from the technical articles there is little of interest to people outside the U.S.A. The s.d.s. are of local interest only as are the endless pages of notes on traffic handling, etc. Any DX info., etc., is usually 4-5 months old and meaningless by the time the magazines get out here. Do the people who are so against "A.R." realise this when they start comparing the overseas mag. value against "A.R."—I think not.

Well, that's how I feel about the matter, and I know that there are lots of others who are thinking along similar lines. Whether they will make their thoughts known or not I don't know.

—Geoff Wilson, VK3AMK.

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the same report could be given from NTH, plenty of good and interesting DX reports. I have not yet received any of my last log entry showed a QSO between P and L2317, not newsworthy unfortunately. I have 307 heard, 173 confirmed. I have 173 confirmed, 307 heard. I will have arrived here from Ray Walle, and it is possible have been mailed direct to the persons concerned. This procedure will be followed for all cards for the next few months. Listeners, there is no need to forward cards. Cards are held here for L2330 whom I do not have. As I have no up to date list of all of our members, I will be unable to do this in the 9/8/87 issue of the Call Book. I have the possibility of receiving cards from you particularly via NTH, via P or via L2330. I would give you your card back so that I may forward any cards on this. Regardless of whether you are an Inland or Outland member, I will be glad to hear from you. One of our writers is L2317, L.W.I.s in Peter Thackeray, G1121. I am writing to VK3 and G1245 in regard to

The following have been heard frequently of late 1988/4D ZEDV [all bands incl. c.w], VKRKT, VKRKR, ZJAAA (who QSLs via Jon ZJLGG but please make your reports good ones and cover a number of contacts - TALAY, MNDAT - Das is QSL GSUSK, PXLVC (Box 24, 1400, LA, CA, operated by Bob), and a number of others. A QSL from a radio trader OUIDBT 14108 is also. AAX was due to appear during mid April for six days from Socorro is, using eight operators, c.w and s.b. SKYs AA, AL and AX are reported to be on. QSL DX Club, Box 24, Vaggersy, Last, but not least, ZJAB will QSL via WQHO, and WFOC, who is regularly heard here, is in the NY Sygne, Plus Drew, Rudin, Semlight, ships, Wales.

The first few meetings of the VEG Group has shown a steady drop in attendance and we are down to around 15 members per meeting. What has happened to the other 350 members who were in the VEG Group in 1976 with 5 w/ numbers in Victoria (but only 350 Associates Ed.) and the Group would be delighted to see some of the members of previous years. The Group wishes to thank the members who have been so helpful in the reports, etc., for the Sunday morning broadcasts from VEGSWI, anyone wishing to submit reports should contact Harry Bloch, 18 Foster St. Membership. Thanks to Len Woodman for the photos.

We are always interested to hear of Amateur Radio being of assistance or comfort to those in need and in view of this, I would like to pass on to you a short run down on the Radio Amateur Invalid and Bedfast Club. It will be readily understood what a valuable hobby Amateur Radio is for invalids, disabled persons and the blind. It is one sphere in which these fellows can compete equally with others, no distinctions or concessions are made or asked

was to encourage this, and to help each other, that this club was formed 11 years ago by a handful of invalids, and the membership has since grown to over 100. With the help of supporters and representatives who visit the members in their area to keep equipment in order and to assist in any way necessary. There are two weekly tele-phoners on Amateur frequencies to exchange news and give pleasure to those who are unable to visit. There are also those wishing to obtain their tickets by supplying text books, and the use of recorded lessons and Braille information. All this work is done by the members, and the club has been successful in securing on tape and the reading of the newsletter for blind members. Braille transcribing is also done, and the club has been successful at two of B.M. prizes as a voluntary work.

As illness knows no barrier, the club therefore is class-less, and non-demonstrational, funds being raised by voluntary subscription. There are members in every continent and in many countries, and the exchange of letters and tapes does much to increase the family atmosphere which is so important for those cut off from the outside world.

Several homes of the Cheshire foundation for the Relief of Suffering have Amateur Stations and belong to the R.A.I.C. with their own weekly get-together and it is the hope of Group Capt. Cheshire that in time, all the homes will be linked by Amateur Radio. Club stations are flourishing at Orthopaedic Hospitals and Schools for the disabled. On the supporting side, various schools with radio clubs take a great interest and are ready to help wherever possible.

Quite often I get a query in the mail from a newcomer to the S.w.I. ranks, who is at a loss when it comes to the designing and printing of their own QSL cards. Design of the card is not the main problem, but the lack of the call sign of the station heard is a very prominent position to assist the QSL Bureau, and other considerations are to have as much data printed on the card and have adequate space for the station's call sign. The QSL card is being reported. Of course, if you attach a report sheet or send the card direct to the station concerned, you can write as much as you want, but any remarks are directed to the station who will be the Bureau.

The days when a fancy and expensive card would "extract a QSL" are over and these days a station either QSLs a S.W.I. report or he does not, that is the elaborate card is quite unnecessary. A plain black and white card on the highest possible board, provided it is well designed, is adequate. The proven "log extract" type of layout is ideal, with printed details of gear, QTH, etc., if possible, with a

clear impression of your club identification and affiliation, and most important, cut to size to fit a standard envelope, will do just as good a job for you as will the glossy effort which costs you a racket.

Recently the Elizabeth Amateur Radio Club, of which I am proud to be a member, had a station printed and made them available to the community.

Printed on good quality card, and well laid out, it cater for Amateurs and B.W. alike, and I feel that it is well up to standard. One of the things thought of was 5.1" x 3.5" and fill in the name of the station being reported in a different color to the rest of the report.

It tells our overworked QED managers to sort their reports out by station and to give the VK3 QSL manager, Ted Whiting, who asks that where possible, if you know a station's QSL manager, write his call on the back of the QSL card.

Costs of cards vary the first ones I had printed cost me about the equivalent of four-hundred dollars for two thousand. The E.A. Smith Co. eventually printed the 3,000 cards of course had to be overprinted (I used rubber stamp). Recently I had a quote for a reprinting of my original card for 2,000 of the same quality I finally got a similar quote. The 3,000 I find is a handy sized order. Don't write and ask me to recommend a printer because I can't do this, however there are plenty of them, even possibly in your own town, whose names I can't remember. I am sure that if you have anything you can bring in from the States.

That winds it up for now. Thanks to the many who have written and whose letters have not been acknowledged through this column, and for a final final, those comments in the VKS column of the April issue of "A.R." were entirely the property of the gentleman concerned. I didn't have a finger in the pie at all. T3, Don Lantz.

The committee met on 6th May and received correspondence from VKA 1VU, 3AMR, 4AT, 4LW. Technical articles have been received from VKA 2ZIF, 3AOU, 3WV and 5PFR and the DX Editor VK6AS. As has indicated by the above call signs, the committee will be unable to submit any DX notes for the June issue. He also indicated that he would like to be relieved of his task and asks if anybody would be prepared to continue his column. He said that he was not a very good writer, was far from good and he did not think he would be able to continue much longer. We asked anybody prepared to carry on the burden to

Some discussion was held on the subject of the poor standard of some of the notes we received during the last two months, but in view of the fact that notes will be discontinued with this issue, no immediate action need be taken. It was decided, if and when notes are resumed, we will once again publish the correct method of preparing the notes and only accept those which conform.

A review of technical articles on hand was made and it was agreed that in view of "A.R." being financially embarrassed, the cost of biochemistry was going to be a problem and we should in nature, keep the cost of the articles as low as possible. It was agreed that every effort should be made to keep "A.R." afloat, but that the Victorian Division should not be expected to carry the loss. The additional 2 cents per copy voted for at the Federal Convention was considered unrealistic and it was agreed that Federal Council should be asked to contribute 1 cent and the Divisions asking for the extra cents originally sought by the committee.

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FEDERAL AND DIVISIONAL MONTHLY NEWS REPORTS

(SEND CORRESPONDENCE DIRECT TO DIVISIONAL REPORTER NAMED AT END OF PARAGRAPH)

FEDERAL QSL BUREAU

The annual Independence of Columbia Contest is scheduled for 0001Z, July 20, to 2300Z, July 31. All bands, 160 to 10 metres, and all modes but no cross modes. A limited supply of details and log forms is available from this Bureau.

The R.E.M. (Mozambique) has made available a new award known as "Mozambique," and also the W-CRT-A Certificate. Details of both from this Bureau.

The N.R.R.L. (Norway) draws attention to its Norwegian Award 1988, which celebrates the 40th year of the foundation of the N.R.R.L. Full information from the Federal Bureau.

QSLs for the operation of VK4KH from Willis Island in 1987 have been issued either direct or via the Bureau.

Further supply of information slips on the Budapest Award have come to hand and are available on application.

Cards through this Bureau totalled 8,000 for April. While this 50 per cent. reduction is appreciated, the envisaged reduction in 50 per cent. has not been attained, mainly due to the reluctance (or obtuseness) of the U.A. Bureau to conform to the Bureau's request. A dispatch received in April from Moscow consisted of 17 packages totalling 33 lbs. weight and contained 3,500 QSLs! Three air mail advices of the receipt of the packages were received. In further attempt to bring them into line, a fresh copy of the arrangements, written in their own language, has been sent. The President of the Radio Sports Club, Moscow. The translation was composed by Alan Elliott, VK3AL.

Am still awaiting information on the disposal of QSLs for VK3BJ, ex. new business and old. No reply. Any delay will be appreciated as the pile is steadily mounting.

Ray Jones, VK3BJ, Manager

NEW SOUTH WALES

COUNCIL NEWS

At the time these notes were written the main topic of news is the I.A.R.U. and Federal conventions which are being held in Sydney consumed all available Council effort. The N.S.W. Bulletin is being held up so as to contain a preliminary report of their events and to include the Annual Report and Balance Sheet for the Division's last financial year.

The auditor's report of the Division's finances shows an increase from just over \$6,000 to \$11,200 in total income last year and a loss of \$1,650 overall. While the total quoted appears excessive, some 3600 covers written off furniture, 8000 of services and costs of repairs and renovations of \$1,320.

A visit to W.C. Atherton St. will soon show that the money expended has been put to good use, the building both externally and internally has been improved considerably, both for members and visitors to the new store. If by the way, if you read this column and you have not yet renewed your subscription, then this may be your last R. until you renew. The sub. is cheaper than anything else you buy . . . and it has an assured life of 12 months.

Senior Vice-President of the Division, Peter ZAJX, has advised of his resignation from Council due to ill health. Peter has rendered considerable service to the Division as Councillor and W.C.E.N. President-Chairman. However, Peter will continue to carry the important duties of President of W.C.E.N. It being hoped that the lessening of the burden will help him to recover his health. Your correspondence is to some extent snarled at the small number of office-bearers carrying on. 1,500 odd members of this Division, many holding two or more positions as did Peter. Maybe the time is approaching when a member cash hold only one office position at once.

After some nine months as Secretary of the Division, Mrs. Long ceased duties in early May. Mrs. Long's untimely death has caused the Council in re-organisation of the office services of the Division and the thanks of all are due for her untiring efforts for tasks involved. The duties of Secretary have been taken up by Miss R. Fletcher.

MONTHLY MEETING

On Friday, 30th April, the April monthly meeting was held at Windsor Institute Centre, Alchiston St. The President, Keith ZKJ, was absent due to business commitments and the Senior Vice-President, Peter ZAJX, presided. The meeting was opened by Councillor Don ZGN. The minutes of the previous monthly meeting were read and accepted. The customary list of new applications for membership was presented to those present for acceptance and were duly passed and welcomed to membership of the Institute.

Don then advised the meeting that due to the absence of the President and the lateness of the arrival of the Bulletin, which contains the auditor's report, the adjourned Annual General Meeting would again be adjourned until the following general meeting in May. Don then introduced the lecturer, Mr. Nicola, Director of Forward Planning of S.T.C., who then gave a very interesting lecture on telecom. systems needed to meet the requirements of the Mt. Newman iron ore operation in W.A. Colour slides of the ore handling operations at Hamersley were shown.

The magnitude of the project was quite impressive and the lecture was enjoyed by all. A vote of thanks was moved by Bill ZYB and passed by acclamation. Following the lecture, a report of the Conventions was presented to the meeting by Pierce ZAPQ who endeavoured to cover the various points raised. A detailed report of the detail from the topic of the Conventions, the meeting then discussed a number of matters finally being closed for the usual cups and raffle.

W.I.C.E.N. NEWS

During April the annual meeting of the Group was held and the election of officers for 1988 took place. The results of the election are as follows: President-Chairman, Peter ZAJX; Secretary-State Co-ordinator, Vic ZVL; Committee: Brian ZQX, Ian ZJLM, Ken ZANT, and Dave ZZZD.

Activity during April was centred on Alchiston St., with a visit to Newcastle by Peter ZAJX to the lecturers. During their visit they may meeting on W.I.C.E.N. The Branch has a considerable number of mobiles and it is believed that a link with Sydney net is being established this year.

BLUE MOUNTAINS BRANCH

At their recent meeting the Branch held the election of office-bearers for 1988, the results of these elections were: Chairman, Bill ZHE; Vice-Chairman, Alex ZBK; Secretary/Publicity, Penny CHL; Treasurer, Alf ZZWV; Catering, Peter Eichauer; Construction Committee: Bob ZAZZ, ZZWV, E. Broderick, and Peter Eichauer. The Branch meets on the third Friday at Springwood. Details of the meetings are published in the Bulletin.

JAMBOROE-ON-AIR-1988

The Australian Boy Scouts' Association will be holding the 11th Jamboree-on-Air-1988 on 18th and 20th October this year. If you would like to participate in this event contact the Branch H.Q. committee, c/o Mr. R. V. Lawrence, C/o Branch Headquarters, Baden Powell House, 266 George St., Sydney.

Your assistance in this event could lead to some Scout or Guide taking up Amateur Radio and even making a career of the hobby. Another Amateur and W.I.A. member added to the ranks would take up too much space. 73, Stan ZKZD.

HUNTER BRANCH

At the meeting held on 3rd May, a good gathering of members was present to hear an interesting lecture on emergency procedure.

SILENT KEY

It is with deep regret that we record the passing of the following Amateurs:

VK5LP—Len Sawford.
VK6BA—Bill Moore.

given by Peter ZAJX who had travelled from Sydney for the occasion. A great deal of discussion ensued and many views were expressed. However, it was agreed that the v.h.f. fm. band should be the focus of the main activity for quite a few members. Even though most of those on this band seem to be equipped with crystals (germanium diode type) in the receiver, they may come to us on the day to do tune the front end to hear the signals from the few with good gear. (That, by the way, should cause a stir and while on the subject of v.h.f. operation, mention must be made of the return of the wanderer, John ZJMD, or baby doll as one Marine View Villa put it. Not only did John return but he brought with him a brand new XYL, Vivienne, to share the joys of Amateur Radio. I am told that no other v.h.f. fm. radio has been so well kept there be the need for duplication of equipment, but this could all be a wicked tale.

And, since we did say something about new XYLs it is my great pleasure to thank all those who were concerned with the beautiful gift given to the ZAJXs at the last meeting. With almost military secrecy the task was accomplished and the most surprised member of the club was inadequate to express my gratitude he must be surprised. I certainly never expected such an honour to be bestowed upon us and I was most surprised to receive the beautiful gift for the thought. Thanks chaps from me, and Argalo gasmasu from Kayoko.

Members had known for some time of the departure of Past President, Stuart ZAYT, for the purpose of Hong Kong, Port Kembla, or whatever, but the Branch of the Branch giving him an inscribed microphone as a memento of the time spent with us was a very warm and adequate to express my gratitude. An important man with his company, John Ly, went, and the general manager's chair will be in the Southern City. We wish you all the best, Stuart, and may the microphone last a bit more time for the hobby, let's hear you on the air—don't. The presentation of the despatch gift was ably supported by Lones ZCB.

For some time, membership fees of the Institute are a very difficult. For this reason, the Branch decided at the last meeting to subsidise the initial membership fees of our junior members. Congratulations to those who are benefiting by this move are Ian Miller, a fifth form student at Newcastle Technical High School, and Greg Ross, a sixth former from Whitebridge High. Both young men have just won the coveted A.O.L.C.P. and this as a result of membership of the Westlake Radio Club. Congratulations are due to those who have shown again that it can be done.

And, of course, the score at the Club grows by the day, or exam. If you like, it now having the largest number of members in the New South Wales Commonwealth. Another two who were also successful at the last quiz were Len Payne, and Freda Payne. Congratulations to them. Therefor. It goes without saying that all are awaiting the issue of the call sign, perhaps most of all Neville, our hard working broadcaster. The Branch is awaiting the appearance on the broadcast with the call to be the first news of its issue. Well done all, and welcome to the ranks.

One who has been in the ranks for quite a long time now, but who has never been in interest in Amateur Radio is Bill ZKX. In the recent I.A.R.C. Propagation Research Contest he was in the top 100 of the contest with a thousand plus with over 700 contacts for the month. Surely this tally must win him a pennant or plaque from Geneva. All on side and welcome.

Whether by chance or design, many members are now thinking about a 5 year and reckoning that it may be the answer to at least some problems of communication. The Westlake Club is the latest to take the idea. As the time you read this, you may have heard them on the air with a duck talker. It was made possible by the generosity of the members and many Hunter Branch members. Well. Thanks chaps for your great interest.

And while on interest, how about the next interesting Branch meeting on Friday, 21st June, or 5th July, if you miss that one. The usual venue will be used, Room 4 in the Clegg Building at the Tech. at 8 p.m. See you? 73, ZAJX.

VICTORIA

EASTERN ZONE

The Eastern Zone held their annual convention over the weekend of April 14-15, 1968, at the Clippeland Educational Centre Hotel, near Mirboo North, and this convention turned out to be one of the best conventions we have had for several years. The program was well planned, having technical sessions included. Attendance was excellent, having 10 sitting down for the dinner, and 100 standing. The guest speaker, an excellent discussion on the history of quartz crystals, their limitations, and modern uses, demonstrating frequency shift with circuitry and hardware.

The annual general meeting followed, the outgoing President, George Z2CQ, handed out a very detailed report, and also presented a brief verbal report. Some office-bearers were then appointed as follows: Stan ZKPI, President; David Z2CQ, Vice-President; Graham Z2GZ, Zone Co-ordinator and Organizer; Les De Vries, Secretary; Zone call-back stations, 1AWV and 30V, Zone correspondents, Rod ZUG and George Z2CQ (phone 4 3883).

The convention portable station, 3ANC3, provided talk-in facilities. During the meeting many points were noted. Also Graham Z2CQ spoke on W.C.E.N. and the Zone DX award certificates, which should be printed by our award committee shortly. During the meeting the local radio society, the Victoria Amateur Radio Society, presented a paper on the Denna Dwyer, one of our foremost potterers. After supper, a survival W.C.E.N. disaster film was screened, and a policy of technical assistance was discussed. The film was very good and families stayed overnight at the convention site.

We also had a very good roll up for the fund-raising event, starting after breakfast, whilst the women and children were in the kitchen, and male, rabbits, monkey and kangaroo, etc., and went for nearby walks, finding some mushrooms. Then men collected technical literature and visited the trade display, represented by Pte Pty. Ltd., Bell Electronics, and Delmar Electronics. The first lecture was given by Fred JYS about a.s.b. equipment and second lecture, followed by Les Z2GJ who spoke for quite some time on v.h.f. and u.h.f. solid state Amateur radio, with practical sub-chassis and units on display.

After the midday dinner, the field competition was held. This included children's events, 3 and 3 m.m. scrambles. The hidden transmitter hunt won by Trevor Z2GA, John Peterson, Les, the "prize giving" took place, some excellent prizes were given for the trade. This year's winner of our new "Neddy Scott Award" was Rodney ZUG (VK3CZ).

Everyone had such a good time and excellent meals, etc. the members decided to hold our next convention on the same date (approx.), same place, next year. Our next convention will be the members visited Bag Dykes's Mirboo North Disposal. Please pass all news on to either myself or Rodney, 73, George Z2CQ.

GEORONG AMATEUR RADIO-TV CLUB

Office-bearers elected at the annual general meeting of the Club were: President, Ian Z2BZ; Vice-President, Mike Z2GQ; Secretary, Bob ZIC; Treasurer, Russ Z2UC; Librarian, John McKewen; Equipment Officer, Graeme Pettit. With a membership of 100, the Club has a transmitter hunts, field days and portable operations. The new year should be a very active one for the club, and the present course advanced students will be held. The Club is always at the Geelong Trade Fair and Motor Show being held in July.

The April 1968 saw an invasion of the Latrobe Valley by Club members who inspected the Tinnago station of GLVIA, the radio club which is a popular and successful member of the S.E.C. V.H.F. radio contacts were made with local Amateurs on both days.

QUEENSLAND

The big event in June is of course the Alexandra Hosiery Convention, which is attended by all South Queensland's Amateur fraternity will be attending. For those in VK3 who, perhaps, are not interested in the Convention who don't read their "QTC", the Convention is being held over the week-end of 14th, 15th and 16th June. Again this year, the Bundaberg Amateur Radio Club will be sending a delegation who remember last year's successful Convention will be along again this year to enjoy the social and technical sessions.

At this time, this Division is in perhaps the strongest position it has ever been in. This is due to the good work being done by Council and to the one and only Assistant Secretary is being paid a small honorarium. As members will expect, the Club is also providing an efficient and speedy handling of all business conducted through Club 6887.

In line with the progressive policy of Council, the disposals business has been expanded. While some miscellaneous items have been offered, they have cleared well. Such items as alarm bells and electric clocks have to be purchased by the disposals officer in order to obtain electronic equipment in the main sale. Perhaps not unexpectedly, some members have shown keen interest in these odd items. The thoughtless result of this has been the transfer of a sum of \$500 from the disposals account to the electronic account. It is a pity to remember that the last major item purchased with excess funds from the disposals account was a small alarm clock.

Those who listened to the Sunday morning news broadcasts from 4WJ during April and May will have noted the absence of the familiar voice of Vince 4VJ. Vince 4VJ was forced Vince to enter hospital. Temporary arrangements were made to have Harold 4H8 conduct the broadcasts. While the transmission had to be made using a.m. (575 to note), country members were still able to copy the transmission quite well. Stations hearing in the 30 m.c. call-back recently have included VK4 49W, 4L3, 4VX, 8WD, 4QW, 4BQ, 4L2 and 4L0.

The next event for next month is, of course, the Sunshine State Contest. This will be held on the week-end nearest to the 30th July, and is due to Jack Finn. More details next month.

CENTRAL QUEENSLAND BRANCH

Our regular monthly meeting was held on 14th April with a good attendance of members present. Main business consisted of the projected trip to Tannum Sands—details are mentioned later—and the advice that the printing of the 1968 Yearbook under the new distribution to members being affected in the near future.

On the week-end, 30-31st April last, Amateurs from Rockhampton, Biloela and Wide Bay areas converged on Tannum Sands for the "Get-together". As predicted, it was an outstanding success—17 members and visitors, and with associated XYLs, harmonics and visitors a total of 70 persons enjoyed a most interesting and pleasant meeting. It should be mentioned that Jimmy 4H2 and XYL 4H2 had a special trip from Gympie to receive recognition for their old V.I.P. status.

Several valuable hints were donated by commercial and private sources for competition prizes in fox hunts, etc.; incidentally, one member some time ago had a fox in his camouflage reminiscent of wartime to elude the "hunters". One of the highlights of the week-end proved to be the screening of interesting and valuable films, which were shown by several of the Amateurs present. In retrospect, the "get-together" was highly successful, and the Central Queensland Branch is confident that three events should be held twice each year in future—the personal contact between friends from different areas serves to strengthen friendships already made by radio.

On the h.f. band, the return of Hal 4DX from holidays has been evident—daily DX contacts are once more in full swing, and the DX contacts are being made by Hal 4DX. Hal will only suffice for a short time. Geoff 4PE still frequents the h.f. area, but seems to be somewhat out of the loop. The 4DX 4PK has installed the 6 m.m. mobile gear into the new chassis, complete with remote control system. In the 4DX 4PK, you might say!

During this April, the 4DX 4PK and 4DX 4PK were very active in the DX sphere; with almost daily openings into JA area, the pages of the DX book are being filled. The 4DX 4PK has installed the 6 m.m. mobile gear into the new chassis, complete with remote control system. In the 4DX 4PK, you might say!

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From Biloela we hear that Dave 4ZDR is back in the DX game in the h.f. band. He will have some competition in the DX field now! The espionage service reported that some time ago he had a good time at the Tannum Sands affair!

By the time these notes are published, several local 2. call aspirants for full licenses will have received the word of the Council. The result will be successful for all, and the thanks of the group are extended to Geoff 4PK who has been a most helpful and providing regular Morse sessions. His meticulous Morse is particularly good copy practices.

Mention must be made of the visitor, John 4ZT, from Flinders, who made short-cut trip to Rock to meet the local gang. A smart shack—ready under guidance of 4PK and an evening's stay in the local hotel. The visit was most interesting, enabled John to make many new friends in quick time.

We understand Frank 4VY will be back again in the near future. We miss his lively presence at the meeting, that's for sure; and we must record to our Secretary, Charlie 4CZ, who has to return to the "self mine", after three or four months' long service leave! Things are tough, Charlie!

Now the spring is QRU—just let me close with the usual invitation to all visiting VK Amateurs, please contact us if you visit Rockhampton. You will be made welcome. 73, Lynday 4ZG.

BUNDABERG AMATEUR CLUB

The monthly meeting was held on 1st May at the club rooms at Gympie Street. A good roll up of members was present. The item of interest for the night was a discussion on VK4.

The main item of news this month is, of course, the very successful camping week-end held at Tannum Sands on April 30-31, together with the Central Queensland Amateur Radio Biloela Club. The roll up far exceeded our expectations and the Club members really enjoyed the company of the other members. I'll leave the write-up of this camping week-end to my CQ counterpart, Lynday.

On our April meeting we welcomed John 4ZT, from Flinders, who made short-cut trip from Bundy. He had worked many JA stations but no VKs. We soon fixed the situation by having our own JA station, and he worked five Club stations in the first four hours.

John 4ZWR and John 4ZT claim the record for the longest time in the Club of 6 hours 4 minutes with the complete time devoted to technical discussion.

The A.O.C.P. classes are progressing well at the club. The 4DX 4PK has started two classes a week with eight class members. The V.R.C. classes are very popular every evening, with the 4DX 4PK teaching 11 elementary and eight junior leads. Peter 4H2 and Evan 4H2 are in charge of these V.R.C. classes.

During last month, we had the pleasure of having a visit from the 4DX 4PK and John Mayer from Mundubbera. We haven't had a syllab 4DX with John yet, as he lives in the 4DX 4PK. We look forward to doing so. 73, Stuart 4ZK.

SEWICH AND DISTRICT CLUB

According to my calendar, the necessary number of days have passed to make a month so once again we have news time, and as usual the brain is wracked to remember what happened during the month.

The main adventure of the Easter holidays was a trip made by 8 club members, XYLs and XYLs to Auburn, some 70 miles north of Chichester and the holiday in the country was enjoyed by all. Some nearby caves were visited and these caves contained some old Indian paintings, which made the trip more interesting. Contact with the holiday gang was maintained on 60 m.m. by Dave 4H4W, who was in the 4DX 4PK with the 4DX 4PK. Other members travelled to VK for a short stay in Casino, but no gear was taken.

On the film evening was held the other Saturday evening, the film being supplied by the JA Council in VK4, and were most entertaining. The 4DX 4PK and 4DX 4PK were in the same calibre will be available for screening again in the near future.

A very interesting piece of v.h.f. gear was shown to the club by Roy 4H2. It was a 3 m.m. converter built around three 4H2s and the size of the unit was impressive. We can see that the 4DX 4PK is a very interesting construction and other interesting points. It is possible that members may scrap their valve units and construct this unit as it uses minimum number of components and the valve would be much cheaper than the valve models. With a bit of luck we might be able to see the "A.R." readers in it if we screw Roy's arm a little.

It won't be long now before we will be up to the 4DX 4PK in the 4DX 4PK and you may even secure a new 4DX 4PK. The 4DX 4PK notes, but until then you will have to put up with me. 73, Warren 4GT.

SOUTH AUSTRALIA

The April monthly general meeting of the VK3 Division was held in the club room to a little below-average attendance of members. The President, Tom 1TL, opened the meeting. On time and good order, the speaker, Mr. F. Rhen, from the S.A. Institute

of Technology, who was to lecture on "Solid State Integrated Circuits" and discussed the very interesting lecture. He covered quite a bit of ground and discussed at some length, thin film circuits, semiconductor integrated circuits, chip integrated circuits, and thin film integrated circuits. He then gave a short history of these devices, together with a description of the various types of integrated circuits. He described the three types of packaging of the integrated circuits, military, space and industrial. Closing the lecture with a discussion of the current state of the art, he stressed that of integrated circuits, he also gave his opinion as to where it is all going. All in all, a very interesting lecture. He was very pleasant and with the plentiful supply of samples to illustrate his point, and judging by the applause which followed the vote of thanks also proposed for SPT, it was much appreciated by all present, and if I may be permitted to offer my humble opinion, he certainly knew his onions and how to put it over.

Very little business, either Divisional or Federal was discussed, and Geoff STY presented his report on the Federal Convention and Joint I.A.R.L. congress held in VK3 over the week-end, and was thanked for his efforts in this regard.

He took the opportunity of presenting the report of the meeting to the badge that he had brought from the Convention to George SRX and Warwick SPS and said a few words of commendation to both for their good services to the VKX Division.

George, in replying to the presentation, said he was stuck for words, but he had always enjoyed his time with the Amateur Division in general, and if every Amateur present did the same, then all would be well for our hobby. Warwick, noted for his ready wit, self-effacement, but he naturally shyness without hesitation that he was stuck for words, but would content himself with agreeing with George, that, as far as the VKX Division is concerned, that now the Liberal Government had got back in power in VK3, a couple of O.B.E.s should also be considered. Judging by the reception of these remarks, it was clear that the chances of such an honour being bestowed on him at least, are decidedly slim.

George, then brought up a matter of domestic nature only, were then discussed, and with the hands of the clock showing 11 p.m., dashed to the meeting, and I was left to wait in a hurry, so much so, that I had the impression that the Albatross Hound had returned from his burrowing place, a thought that speeded me home.

Of particular interest to members at the meeting was the presentation of the J.A.R.L. Award of Merit to George SRX, presented by the convention with the compliments of the J.A.R.L. The President, in accepting the pennant on behalf of the VKX Division, made a few well-chosen words, which were received with acclamation by all present.

Among the welcome visitors at the meeting, was none other than Don GOF, who, incidentally, is an ex VK3, but remembered as SGO, and he was busy most of the night in greeting many old friends. He recognised me immediately, and I was glad to see him. He suggested that I might one day visit VK4, he said at least I would not slip on a banana, but the tone in which he said it, made me to believe that he was not kidding. I was much amused in his mind. Good to see you again Don.

I heard my favourite doctor on the air whilst listening on a T.C. band at Oakbank this night, none other than Colin BXY who was heard to say that he was a "little bit of a rascal" and was being bitten by the bug again, so far he is on a m, but that does not mean a thing in these days!

I also heard Harry SYB at Keith in GSO with Buck and some other friends, reading their mail. Was amazed to hear Buck say that he was anxious to cut the lawn, but as it was too dark to do so, he decided to wait until the neighbourhood to start. However, let him hear just one lawnmower start up and he would be in it. It is a pity that these unchivalrous fellows how low can one get?

Had the pleasure of working Colin BXY and Ron SZRW who were portable at Port Clinton. Colin, a doctor, and Ron, a lawyer, and a whip, and Ron was weeding the lawn at his orders. Ron had a bit of a grime when he spoke to me, but the whip proved too strong and he had to work.

Nobby SWK gave me a call, he described it as his annual but I treated that with ignore and told him to call again as I was having a good time. He said that he was going to him to prance all around the room, but we finally made it and swapped exaggerations for a while. He was a bit of a rascal, but his daughters interstate and Nobby was spend-

ing the Easter week-end alternating between GSOs and making cups of tea, and believe me he makes a potent cup!

Also had my usual annual contact with Carl SRX and Frank SMZ, although I sell for a while that was going to miss them, but fortunately they gave a break at last and I burst in. Missed out on quite a lot of the usual VK3 contacts this year, whilst portable, mainly because there were no stations to make stations from the "big smoke" on the air. However, the wise men from the east made up for this by sending me some more of interstate calls this year.

Dave DGS was putting the loudest and strongest signal of them all when I heard him, he was working the Adelaide SVB at the time, and was telling him that he was going to make a visit to the Zoo on the next day. I have not heard him since and fear the worst. Hope they never managed to catch you Dave!

Called Bob SRI at Mount Bryan and managed to contact him, although he told me that the dust that was blowing at the time was reading several dB over plus 9 and naturally was making it very difficult to copy me. I finally lost him, apparently in the dust, but was well satisfied because my little 35 watts was above the dust-end.

Hughie SBC heard on 7 Mc. working ZAIL mobile at Renmark. Stuck around in the hope that he would be able to make a contact, but he folded up without any warning. Hope all is well, Otto?

Another stranger to me to be heard on 7 Mc. was a fellow called my old football mate of years ago, Keith SY. I usually manage to work him from Oakbank, but missed out this year as he was away on a holiday. I know other, who works on the Tote with me, and he claims to know you Keith. I tried to pump him for a little espionage news on Keith, but he was too canny.

Kevin SEP is a new one to me on 7 Mc. but as he was heard to say that he is not very active, I will leave the explanation for him being a newcomer to me.

About this time every year when I take my annual leave from SEP usually takes over these columns and does such a splendid job. I gash my leg for a few days. This year however my holidays have fallen in such a way that I am able to fit the note in. And Colin has been kind enough to forward his "little black book" containing the names of all the quick-quick stations in VK3, much to my satisfaction. I have been able to find out Comp. I know how upset you will be over not being able to have the annual shot, but stern issues require stern measures!

Talking about quick-quick, don't let anybody tell you that I am not a quick-quick. I am Modern stations, or won't even answer a call. I called them, and was called by them, at Oakbank. I never missed out on one. I have heard this story of social status on a number of occasions, but can only speak as I find. Maybe it is because of my modest nature, or possibly my unwillingness to be chosen and same to you.

Was quite surprised at the number of letters from country members to the VKX that I received commenting on my write-up on the recent lecture at the monthly meeting concerning U.F.O.-undisputed flying objects. I have always been a keen writer of the notes on the lectures on the meeting nights. I feel that I could be accused of being something of a "country member" and I am sure that I am not the only country member likes to hear about the lectures. Without being over modest, I felt that I did a good job on the abomination of lectures and I feel that I am not the only country member likes to hear about the lectures. I thank you I thank you I thank you.

Notice by the VKX notes for April that VKX was honoured by a visit from Bob SRW and my life was only a blur. I am sure that I will remember my initials to find me in the telephone book, and he had left his call book behind him. I am sure that I will remember my initials to find me in the telephone book, and he had left his call book behind him. I am sure that I will remember my initials to find me in the telephone book, and he had left his call book behind him.

Listening in to SJQ and SJD having a spirited discussion on the merits of their respective antennae. John is using a ground plane, whilst SJD is using a whip. I am sure that I will remember my initials to find me in the telephone book, and he had left his call book behind him.

It is a funny thing how call signs stick in the mind, no matter how long ago the call was. I am sure that I will remember my initials to find me in the telephone book, and he had left his call book behind him. I am sure that I will remember my initials to find me in the telephone book, and he had left his call book behind him. I am sure that I will remember my initials to find me in the telephone book, and he had left his call book behind him.

Chief, who was licensed some thirty years ago and gave it away to concentrate on commercial radio. Don't tell him that I had forgotten his call, it might give me a dirty look. Some of these amateurs are brave men these days. Rex SMZ, working Frank SMZ, was heard to say that he had been called 80 times during the night, and he was not sure if he had to do something about it. 80 times! I have gone as many as three calls, but 80, not me!

Any time that I listen on 7 Mc. when it is open there are always more than their share of VK3s, but the other night, or should I say the other night, I was on 7 Mc. and was full of stations, but only one VK3, none other than Murrie SAVO, and with a signal that did not sound like a VK3. I am sure that I will remember my initials to find me in the telephone book, and he had left his call book behind him.

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SMGSD passed through Adelaide recently and called Ray SRI, late at night, with an invitation to visit the city's Chinese restaurant. The invitation was accepted, but I am sure that I will remember my initials to find me in the telephone book, and he had left his call book behind him.

Incidentally, Ray SRI has almost completed his term as President of the Air Force Association, tells me that he has had to enter, late at night, into the Air Force "Theatre" during the past year or so.

The last Scavenger Hunt organised by the VKX was a very successful one. The winning team was the "Scavenger Hunt" team, and the winner turned up in John SZD, with a list of answers. Much to the organiser's surprise, no one called him from Balhannah in the middle of the night, but I am sure that I will remember my initials to find me in the telephone book, and he had left his call book behind him.

Regarding the geography part of the hunt, Uncle Tom (STL) found himself looking for the Tumare Police Station on Greenhill Road, and was unable to find it. I am sure that I will remember my initials to find me in the telephone book, and he had left his call book behind him.

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George SRX was telling me at the meeting, with a tinge of sadness in his voice, that in 1915 he was married. George SRX and Len SLP were his best man, groomsmen, and the M.C. at the festivities respectively. George was married on the 14th month, 1915, and was now married on the 14th month, 1915.

I have mentioned in these notes before of First Firebird Club and the "Firebird" Club, but up to date I have never been lucky enough to hear "them" in action. It appears that the "Firebird" Club is now a "Firebird" Club, and the "Firebird" Club is now a "Firebird" Club. I am sure that I will remember my initials to find me in the telephone book, and he had left his call book behind him.

Well, I have run out of news, and will have to be satisfied with this little lot for this month. One of these days I will manage to get a full column in the magazine. I am sure that I will remember my initials to find me in the telephone book, and he had left his call book behind him.

WESTERN AUSTRALIA

El there! Well another page has been removed from the calendar. Another Easter has slid by and our new Federal Councillor, Neil 6ZDK, is still stannied by the Federal Convention. I think from all accounts a busy though enjoyable time was had by all, both at the Convention and at the Region 3 Congress. It was perhaps unfortunate that some countries which had expressed interest were prevented by lack of funds and various other reasons from sending a representative to the Congress.

Of most interest to us here in the West is the good news that I88 should see the Convention held in our own fair city. This will mean that a great deal of preparatory ground work will be necessary if this function is to be a success. So, when the call comes for voluntary assistance, two paces forward march you and YOI and me!

The merry month of April saw a smaller than usual attendance at the monthly meeting, which was of course followed by the Annual General Meeting. Perhaps it was because of the cold wet night or the fact that some folk were still enjoying the Easter break—who knows?—but it is not to reason why, etc. Suffice it to say that the necessary reports were read, revealing a satisfactory state of affairs within this Divvy. Luckily, sufficient public spirited fellows were offering and the "prez gang" will not have to "co-opt" members to fill positions on the Council. Thanks also, and good luck as you go forward into advising and guiding the affairs of the Institute.

Our new President is Bob Elms, VK6BE, who has always given great service to this Division over the years. Congratulations Bob!

A number of new jobs have been found for members of the Incoming Council, mainly designed to lighten the burden of our hard working Secretary.

It is with deep regret that we must record the untimely passing of Bill Moore, VK6BA, and our sincere sympathy goes to his wife and family.

For those who are unable to bear the Sunday news of the radio, I have decided to read the Bulletin. It may be of interest to note the re-commencement of Slow Morse sessions on

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Monday evenings on 80 and 6 metres. Together with the lowering of the c.w. requirements, perhaps these sessions may encourage a few more hams to tackle the Morse section of the examination.

Welcome to Kevin VK6ZK—a new call to appear on 6 metres.

One of my ex-cities (yes, I have just sacked him) let me down badly. It seems from the meagre information offered me that Keith 6KRI has moved to a new QTH elsewhere? When? What's the good of a half a story.

Roger 6DT, struggling manfully with the problems which beset those who attempt to home brew a first class transmitter, has been heard recently on 50 and 25; good work OMF.

Alex 6AS is now sporting a very nice piece of sideband transmitter which will enable him to appear on any of five h.f. bands. He is currently delving into the receiver side of the question and discovering things about a trapped vertical antenna which adorn a small space in his back yard.

Remember that space that I have been advising you to watch with regard to the Zone 39 Award? Well keep watching!

Well that winds it up for now. 73, Zoon 8DA.

TASMANIA

Your Council appointments for the year 1968-69 are as follows: President VK7CT, Senior

HAMADS

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CONTRA is now Australia's best Youth Radio magazine. If you know a young lad interested in Radio, recommend him to send 15c for a sample copy or a year's subscription. Contains construction, theory and general articles of special interest to the young enthusiast. Names who directly through their ticket might even find some novel ideas for all Youth Radio Clubs. CONTRA is a must! Send to: sub-manager, 112 Monaco Cres., Red Hill, A.C.T., 2603.

FOR SALE Eddystone 989A Communications Rx, Ham bands only, 1.8-30 Mc., excellent performer with product detector, variable selectivity, xtal cal., \$200. Capphone MIRA 6/12 val. 3 channel with xtal for A-B-C, 90w. 4Q250B tube with special socket and broadcast band. 20 Mc. transformer with all h.t. and i.t. windings to suit this tube as described. "Wireless World", March-April, 1967, review, \$20. Pye 4000 series wide sideband xtal, 100w, 220 V. 6 W 204 phase shift network, unused. S1 Creed SW75 Teleprinter w/o keyboard but with reper., not in standard speed but can be converted, 100w. Excellent performer, no time for construction. VK7CF, Phone 437-1811

FOR SALE: Heathkit RF Signal Generator, 100 Kc. to 220 Mc. in five bands. Calibrated against laboratory standard, \$30. VICOY, Chas Richardson, 1252 Hepburn Highway, Cheltenham, Vic. Phone 95-5577

FOR SALE: Heath Solid State Voltmeter, Model 1M16 Kit. \$70. K. Pincoff, VK3AFJ, Phone 25-5775.

FOR SALE: Shock situation ridiculous, overcrowded and underused. Heathkit HW227/40A Transceiver with 240v. a.c. filament primary, all accessories, \$200. Several Philips FM1674C factory converted 14 Transceivers, 25w output, transistor supply, with mike, modulators, aerials. 1 crystal. Gelsco FM1655A complete, unconverted, \$10. "Courier" FM1620 complete, unconverted, \$20. Pye Mk 2 beam, 240v. a.c. receiver tuneable 52.53.5 Mc. transmitter, a.m. modulator, performance \$40. 6.5 Mc. 3 mable, complete, working, \$20. Philips 25w. a.m. transmitter 14 Mc. with speech clipping and filtering, \$20. Heathkit model 1400, 100w. Vipa VFD, 8006, 80 through 10 metres with 25w. 14 Mc. transmitter, common modulator switched between both, fully metered, mike and 12v. d.c. transistor supply, 80w. Converter, 6.5 Mc. 3 mable, converted, \$19. "Western" LMB Small Ship Transceiver, 2524 Kc., demo, unit, 80w. Fully built 1969, H/F transmitter, Gelsco V100 VFD, cabinet and metalwork, meter, modulator trans-

Vice-President, VK7AL; Junior Vice-President and Zone Representative, VK7CR; Treasurer, VK7ZRO; and Secretary, VK7KE3.

The Annual General Meeting of this Division was held at the Club house on 23rd March, and was followed by the Annual Dinner attended by 71, made up of guests, members and their friends. We were delighted to receive the Director of Ports and Telegraphs, Mr. R. R. Gilson, and Mrs. Gilson; the Senior Radio Inspector, Mr. A. Monrow, and Mrs. Monrow, and Mr. H. Melling and Mrs. Melling as our official guests.

Northern Zone elections for the year 1967 were as follows: President, VK7ZCF, Secretary, VK7ZRO, Treasurer, VK7ZCW.

Our most sincere thanks go to Ted VK7EJ our Federal Councillor, and David VK7MD, his official observer, for attending on our behalf the Convention and Region Congress held in Sydney over Easter. We look forward to their reports.

Congrats to Peter ex-VK7ZPD on gaining his full licence with the call of VK7PL, and Reg ex VK7ZAO in the same regard, call sign yet unknown.

Many old timers will remember Chas VK7CM. I am glad to report that he is again living amongst us with 5 call signs. Chas has been appointed to a Professorship at the Tasmanian University.

73, Ian VK7ZG.

former, valves, etc. \$40. SSB Exciter, output couple watts on 14 Mc., 5.5 Mc. filter, 8 valves, 7 crystals, compact handset, \$40. Sentsil BC318 Receiver, U.S. Army Vercord, 100w. 100 Mc. coverage 1.5-18 Mc. in six switched bands, 455 Kc. 11; in-built 240v. a.c. supply, \$30. VK2ABZ, 147 Rudden Rd., Blandford, N.S.W.

FOR SALE: VHF Base Station A.W.A. 950 converted for 2 metres, 100 watts input, one set of crystals, \$60. Tony Burlington, Phone 560-9176 Melbourne.

BELL: ART Communication Receiver, A1 order. Complete with P.A. and speaker. Also P.O. supply unit, 750-800 at 173 mA, 200-300 up to 100 mA, 6.3v fil., 105v negative bias, good regulation VK4BS, 35 Vlynot St., West End, Brisbane, QLD. Will pack and forward.

BELL: Contax AM Base Station, 53.032 Mc., xtal mike, tuneable rx needs alignment. \$45. K. Pincoff, VK3AFJ, Phone 25-5775.

BELL: Heathkit model station in good working condition. Mohawk Rec. and matching Apache transmitter. Incl. VFO and xtal cal. built in, 500w. 240v. a.c. filament primary, 100w. CW and AM full power. SSB mode, but needs adaptor, \$210 for both, \$105 for receiver. VK4CU, P.O. Box 601, Toowoomba, Qld. E. Coan. Te. 5-3641.

BELL: Heathkit Model GR-P1 Rx, freq. 1.5 to 30 Mc., good condition, plus step-down transformer 240V-115V, built-in d.f.o., \$30. Bruce Paton, 18 Dargie St., Mt. Waverley, Vic., 3149. Ph. 232-8144 after 5 p.m.

BELL: H.R.O. Senior Communications Receiver, 1.7 Mc. to 30 Mc. general coverage, crystal filter, 50w. BFO. Completely re-aligned. Complete with power supply and loudspeaker, \$120. Phone Melbourne 787 1407 A.H.

BELL: In original carton, unused genuine Vibroplex "bug" key which is surplus to present requirements. Cost \$35 to land. To best offer over \$20. Reg Jones, 1 Albert Rd., Melbourne, 3004. Phone 26-3911.

BELL: Pve Reporter Mk 1, 53.032 Mc. with crystals and working OC222/8 final, transistor modulator, 50w. 240v. a.c. filament primary, VK7ZG, J. Brown, 31 Laural St. Red Cliffs, Vic.

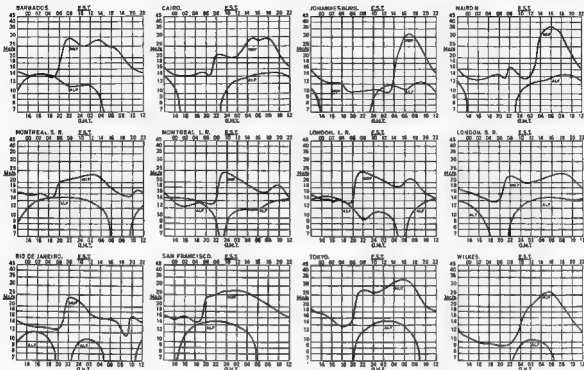
WANTED: Communications Receiver, ART, BC308 or similar or Gelsco Amateur Band Tuning Unit. Condition, price, to VK2ZST, 34 Flona Rd., Bercoff, N.S.W. 2119. Phone Sydney 84-1680.

WANTED: Prop. Pitch Motors. If you are not using that prop motor you have, write and let me know what you want for it. These motors are required. C. Serra, VK1CR, 23 Satchell Rd., Torrens, Glenelg, 2087

WANTED TO BUY: Transmitter, Model 15, Creed 70 or similar. Also Terminal Unit, home brew or commercially built. P.O. Box 18, Tennent Creek, N.T., 5780.

PREDICTION CHARTS FOR JUNE 1968

(Prediction Charts by courtesy of ionospheric Prediction Service)





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VKJZJ 301/215	VKFTL 283/286
VKJAB 300/314	VKATY 288/287

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VKJQL 305/315	VKAHR 288/290
VKJAHQ 294/308	VKJNC 286/288
VKJCK 291/312	VKJAPK 288/214
VKAFJ 291/318	VKJAT 288/283
VKJQM 291/313	VKGRU 284/283
VKJAGH 291/294	VKJAPK 261/288

New Members:
Cert. No. 91—VKJKE 118/122
Cert. No. 88—VKJPK 86/108

Amendments:

VKJZJ 260/228	VKJDO 184/261
VKJES 218/221	

OPEN

VKJAGH 310/288	VKAFJ 283/318
VKGRU 308/282	VKATY 283/287
VKJVN 308/321	VKJEO 283/314
VKAHR 305/287	VKJAPK 287/288
VKJQM 306/282	VKJAPK 284/282
VKJMK 302/282	VKFTL 281/283

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VKJSG 345/253	VKJGV 118/118
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Also available: Transceiver FT-50, Transmitter FL-50, Receiver FR-50, Low Pass Filter FF-30DX, Type "F" SSB Generator assembly, SWR Meter K-109, Yaesu Valves and Spares, Co-ax. Connectors, Hy-Gain (U.S.A.) Beams.

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Rep. for N.E. N.S.W.:

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BOOKS OF INTEREST FOR AMATEUR OPERATORS

- ★ **A.R.R.L.—THE RADIO AMATEUR'S HANDBOOK**—45th Ed., 1968 Edition Price \$6.10 Posted
The standard reference work and text for everyone—Hams, Experimenters, Students, Engineers, Laboratory Men, Technicians.
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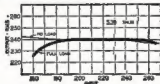
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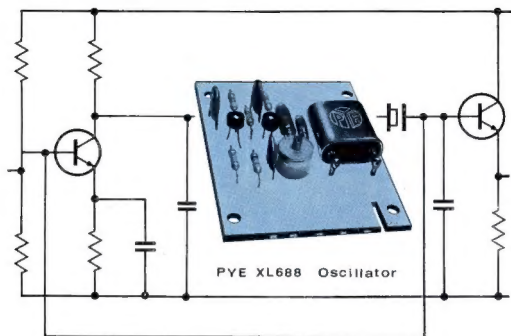
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